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NATAL PLANTS.

DESCRIPTIONS AND FIGURES OF

NATAL INDIGENOUS PLANTS,

WITH NOTES ON THEIR

DISTRIBUTION, ECONOMIC VALUE, NATIVE NAMES,

&c., &c.,

. . . BY . . .

J. MEDLEY WOOD, A.L.S.,

CURATOR OF NATAL BOTANIC GARDENS, DURBAN.

—AND—

MAURICE S. EVANS, M.L.A., F.Z.S.

PUBLISHED UNDER THE AUSPICES OF NATAL GOVERNMENT AND DURBAN BOTANIC SOCIETY.

VOLUME 1.

BENNETT & DAVIS, PRINTERS, 345, WEST STREET, DURBAN.

1899.

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VOL. 1—PART 1.

CONTAINING FIFTY FIGURES AND DESCRIPTIONS.

BENNETT & DAVIS, PRINTERS, 68, FIELD STREET, DURBAN.

1898.

PREFACE.

OUR principal objects in publishing these descriptions and illustrations of the Natal Flora are: 1st.—To enable colonists to identify some of the wild plants coming under their notice, and to call attention to points of interest connected with them. 2nd.—To endeavour to stimulate a continued interest in Botany among younger colonists who may have acquired a knowledge of the rudiments of the science at school, and who may be in danger of losing interest in the subject for want of such information as we may perhaps be able to supply. 3rd.—To put on record accurate botanical descriptions and figures of noteworthy plants which may be of use to botanists generally. 4th.—To publish in the colony descriptions of plants new to science found in Natal.

Having these somewhat diverse objects in view it became a little difficult to so arrange our description, that while enabling those only slightly acquainted with botany and botanical terms, to use it without too much difficulty, it would still be of value to trained botanists. The former class may think that the language used is too technical, and without some little effort and attention they may find that such is the case, but we submit that a little study, with the assistance of such a glossary as is attached to any botanical text book, and with the help of the figures and native names given, no intelligent colonist need be long in identifying any of the plants figured.

To the skilled botanist we ought perhaps to apologise for the inclusion among what should strictly be specific characters, of many of generic, or ordinal value, but this will be understood by them when considering the other classes for whom we write. Though we trust this effort will be useful to many, we regard it as simply bringing somewhat nearer, what will, we hope, ere long be published, a full "Flora of Natal," but meantime through insufficient detailed knowledge of the plants throughout the colony, paucity of workers, lack of time and funds, together with the small amount of interest taken by the general public in the subject, this much to be desired end is still far off, but every effort of this kind serves to bring it nearer.

Should the perusal of this work inspire those unacquainted with botany to take up the study, we would recommend careful reading of any elementary text book on botany, comparing the knowledge gained with living plants. When a full knowledge of the parts of plants, and the terms generally used has been acquired, a study of the classification should be attempted, trying to place the commoner and more easily accessible ones in their proper Natural Orders. Familiarized with this, an attempt may then be made to refer them to their respective genera, and here Wood's "Key to the Orders and Genera of Natal plants," will be found of use; it would be advantageous too if Dr. Harvey's "Genera of South African plants" could be used in connection with Mr. Wood's work, as here the genera are fully described. Beyond this stage no completed work is available, for the "Flora Capensis," which enables a botanist to identify the species of any South African plant already named, is not yet completed, though now in hand and likely to be an accomplished fact before very long. But the Colonial Herbarium now at the Botanic Gardens, Berea, in which are about 7,500

sheets of South African plants, for the most part authentically named, is available to the student who has so far advanced as to make it of use to him. There is a grand field in Natal for the botanical student; the plants of the colony are not by any means fully known; species new to science, many of great interest, structurally and in their distribution are to be found even in the most accessible parts, while the remoter districts are rich with new or interesting plants; and to those who look more to points of economic value than to those of scientific interest, there is a large field; for it is eminently desirable that the native names and uses of plants should be placed on record before it is too late, and workers who know little of, and do not care to learn systematic botany may do good service by collecting, drying, and sending to the Colonial Herbarium, plants used by the natives for medicinal or other purposes. Should this publication induce anyone to help in the work, printed instructions for collecting and drying the specimens will be forwarded, specimens named, and advice given by either of us, and the Colonial Herbarium, with its library, is open to those who are far enough advanced to wish to classify their collections themselves.

The study of plants is a most fascinating one, and is within the reach of all; the material lies at our doors, and particularly for those who live in remote isolated districts, will change days of weariness and discontent, to days of intellectual pleasure, and the delight of constantly increasing in knowledge, and increasing the sum of it for the benefit of their fellow colonists. As an introduction we should have liked to have given a sketch of the Flora of Natal, its geographical distribution and affinities, but the material at our command is not sufficient. When more general interest is evinced in the subject, and workers are more plentiful, it may be done, but meantime, what we want is more detailed knowledge. We trust that the first part of our work may meet with a good reception, but whether or not, we propose to publish a similar part also containing 50 plates, which, together with the present one will form a volume, and will be furnished with an index to the whole, so that they may be bound together. Beyond this we cannot promise to go without a fair amount of support from the public, but should such support be given we trust to further continue it, as the field, at all events, will take long to exhaust. When contemplating this work we approached the Government asking their countenance and support, and we have to thank them most heartily for both freely given. In any case should profit accrue, it will go to the funds of the Colonial Herbarium, but the liberality of our Government has prevented the chance of any serious financial loss to us. We would wish also to gratefully acknowledge the very valuable assistance we have received from the Herbarium at Kew Gardens, in the absence of which, publication of such a work in the colony would hardly be possible; large numbers of specimens have been compared and named for us during many years past, and advantage has been taken of the descriptions of some of the plants here figured, in the pages of the Kew Bulletin, Flora Capensis, and Journal of Botany.

We also have to thank Miss F. Lauth, Assistant in the Government Herbarium, for the drawings signed with her initials, and also Mr. Walter Haygarth for the others appearing in this part. Both have undertaken this work in addition to other various duties, the latter entirely in his limited leisure time. Both have taken great pains to be accurate, and we can vouch for it that they have succeeded fairly well. Of the artistic value of the plates we leave others to judge, but would say that figures of Natal plants drawn in the one case by a Natal born colonist, and in the other by one who has passed all her life and been educated in the colony, and which is printed and published in Natal, certainly deserves the support of the colonists.

PLATES 1 and 2.

MOSCHOSMA RIPARIA, Hochst.
Natural Order LABIATÆ.
Tribe OCIMOIDÆ.

A dioecious undershrub, with brittle stems and branches, large leaves, and pale lavender flowers. Stems erect, branching, terete, and glabrous with pale bark, 3 to 5 feet high; branches terete, green, very finely pubescent, and with a few pilose white hairs. Leaves opposite, exstipulate, broadly ovate, cordate at base, acute or obtuse at apex, edge coarsely crenate, the lobes again toothed: veins very conspicuous beneath, and plainly visible above, paler beneath, densely pubescent on veins and veinlets beneath, more finely so on lamina, veins and veinlets above, 1½ to 6 inches long, 1¼ to 5 inches wide; petioles ½ to 4 inches long. Inflorescence in large axillary and terminal panicles, those of the staminate plant, usually larger, and more loosely flowered than those of the pistillate plant, ultimate branches of the panicle of the staminal plant 3 to 4 inches long, of the pistillate plant 2 to 3 inches long, the whorls about 15 to 20 in each, but in the pistillate plant they are much more crowded together; in both from 5 to 9 flowered. Calyx gamosepalous, campanulate, 5 fid, back lobe larger, ovate, obtuse; lateral lobes acute, or sub-acuminate, ciliate, veiny. Corolla gamopetalous 5 lobed, lower lobe longer, all obtuse, pubescent outside; in male flowers back lobe erect, lateral reflexed, lower strongly so; in female flowers, all sub-erect, and smaller than the male. Stamens, in male flowers 4, didynamous; on corolla tube above the base, exserted; anther cells confluent; filaments flattened; in female flowers absent. Style bilobed, in male flowers shorter than stamens, but longer in the female flowers, lobes spreading, or reflexed. Disk forming an oblong gland in front of calyx tube. Ovary 4 parted, present also in male flowers, but abortive. Fruit of 4 little nuts in base of calyx tube.

Habitat: NATAL: Inanda, August, 1800 feet alt., *J. M. Wood*, No. 141; Gerrard & Mcken without locality in Government Herbarium, No. 1889; Umgeni, J. M. Wood.

Drawn and described from specimens gathered near Durban, July, 1896.

The genus Moschosma contains 6 species only, one being Australian, one Abyssinian, one Tropical African, one cosmopolitan, but not reaching Natal, one a doubtful species, and the above described one. Our species is remarkable for being dioecious, that is bearing male and female flowers on different plants. Although the Order Labiatæ includes more than 2500 species this is the only one known to us having this peculiarity. Like most plants of the Order, it is strongly scented, and is also somewhat viscous or clammy to the touch, the glands exuding the viscous matter being very minute. It is often infested with a parasitic fungus (Uredo labiatarum) which causes the leaves to have a sooty appearance. It is known to the natives as i-Boza, is used by them medicinally, and is sometimes cultivated as an ornamental shrub by colonists. It flowers in winter only, and then very plentifully; in Umlaas location being quite a conspicuous object at that season.

PLATE 1. Fig. 1, Leaf and panicle, natural size; 2, Flower front view; 3, Flower, side view; 4, Section through calyx, showing rudimentary ovary, style and stigma; 5, Stamens; all variously enlarged.

PLATE 2. Fig. 1, Leaf and panicle natural size; 2, Flower; 3, Flower opened, showing ovary, style, stigma and disc; 4, base of calyx tube showing ovary and disc; all variously enlarged.

PLATE 3.

PHYTOLACCA STRICTA, Hoffm.
Natural Order PHYTOLACCEÆ.

Roots tuberous. Stems erect, somewhat angular or striate, glabrous. Leaves alternate, petiolate, exstipulate, entire, lanceolate to ovato-lanceolate, obtuse, 1½ to 3 inches long, including petiole; 5 to 10 lines broad. Petiole 2 to 5 lines long. Flowers in axillary and terminal racemes, which are 1½ to 4 inches long, and laxly 8 to 15 flowered. Perianth 5 parted, lobes erect, ovate to obovate, obtuse, membranous edged, 1½ lines long; ¾ to 1 line wide. Stamens 8, hypogynous, on margin of a small circular disk which lines base of calyx tube, shorter than perianth lobes, anthers falling off early. Carpels usually 6, fleshy in fruit, connate at base only; 2 to 2½ lines long, 1 to 1½ lines wide, yellow when ripe.

Habitat: NATAL: Umhloti Valley, 1200 feet altitude: December; *J. M. Wood*, No. 1178. Near Newcastle, 3900 feet altitude. December, *J. M. Wood*, No. 5857.

Also found in the Cape Colony.

Described and figured from Wood's, No. 5857, in the Government Herbarium.

Fig. 1, Stem with leaves and flowers, natural size; 2, Section of flower showing carpels; 3, Fruit seen from above; 4, Carpel; all variously enlarged.

This plant is said to have large tuberous roots like the sweet potato, but these in the Herbarium specimens are not present. Dr. Andrew Smith says of this plant "Three brothers had been eating a portion of the tubers when out in the field and were poisoned, fortunately one of them was able to go home and report. They were recovered by giving them an emetic, though one of them was in a state of collapse." The roots of one species of this genus are said to be emetic, and cathartic, and the young shoots, though extremely acrid, are rendered harmless by boiling, and are sometimes used in the same way as Asparagus.

PLATE 4.

CALPURNIA LASIOGYNE, E. Meyer.
Natural Order LEGUMINOSÆ.

A large shrub or small tree, sometimes reaching 20 to 25 feet in height, with trunk 8 inches in diameter, of erect compact habit, with greyish white bark, and spreading branches. Leaves unequally pinnate, of 12 to 26 leaflets, exstipulate, petioles glabrous; including petiole, 6 to 9 inches long; leaflets glabrous on upper side, and slightly pubescent below, often slightly unequal at base, obtuse or retuse, varying from distinctly opposite to as distinctly alternate, 1½ to 2 inches long. Racemes as long or longer than leaves. Pedicels 3 to 8 lines long. Calyx widely campanulate, 5 fid, the two upper lobes semi-connate, glabrescent, conical at base, 3 to 4 lines long. Corolla papilionaceous, 6 to 8 lines long, standard sub-orbicular erect or recurved; wings ovate-falcate, clawed, keel incurved, obtuse, clawed, slightly united along back. Stamens 10, connate at base, filaments glabrous, a little dilated at base, anthers versatile. Ovary stipitate, silky with short white hairs; style incurved; stigma minute; ovules several. Legume flat, membranous, compressed, winged along the ventral suture, valves approaching each other or united between the seeds, 2 to 3½ inches long, 3 to 6 lines wide. Seeds oval, light brown.

Habitat: Natal; at edges and in bush from the coast to the Drakensberg.

In his report on Natal Forests, Mr. Fourcade says of this plant, "Bark yellow-brown, thin, wrinkled, wood heavy, hard, compact; medullary rays very fine and close. intersected by numerous short oblique patches of white tissue, pores small, not numerous, irregularly distributed; colour light brown: not used. Native name Isipane.

Fig. 1, Branches with leaves and flowers, about natural size; 2, Calyx and stamens, petals removed; 3, Section through staminal tube, showing Ovary and Style. Petals, (a) Standard; (b) Wing; (c) Keel; 4, Stamen; all variously enlarged.

PLATE 5.

CYRTANTHUS ANGUSTIFOLIUS, Ait.
Natural Order AMARYLLIDEÆ.

Bulb ovoid, 1½ to 2 inches in diameter, tunics brown, membranous. Leaves 2 to 3, contemporary with, or appearing after the flower, linear, green, straight, 1 to 1½ feet long. Peduncle as long, or longer than the leaves, hollow, lengthening in fruit, at first bright scarlet, afterwards dull green. Umbel 4 to 10 flowered spathe valves 2, lanceolate, lined, scarious, 1½ to 2 inches long, pedicels 1 to 1½ inches long. Perianth scarlet, 2 to 3 inches long, tube trumpet shaped, curved, gradually widening to throat, expanding to 1 inch or more, segments 6, oblong, the three outer acuminate, with a small tuft of minute white hairs under the apex, the three inner blunt, with smaller tuft of hairs; 6 lines long, 3 lines wide. Stamens 6, one opposite each perianth lobe, inserted just below the throat, and a little shorter than the lobes; anthers oblong, yellow, Style as long or a little longer than the stamens. Stigma 3 lobed, lobes recurved. Ovary 3 celled, 3 lobed, with numerous superposed ovules. Seeds flattened, black.

Habitat: NATAL: On grassy hills all over the colony.

Known in Natal as the "Fire Lily," and very conspicuous on the hills in the spring months, commonly appearing after the grass has been burnt off. It is found all over the colony in open ground, from the coast to the Drakensberg, and also in the Cape Colony. It was introduced into cultivation in England, flowered there in 1774, and was figured in the Botanical Magazine in 1794, tab 271. The genus contains 25 species, one being from Tropical, and all the rest from South Africa.

Fig. 1, plant about natural size; 2, Corolla laid open; 3a and 3b, tips of outer and inner perianth lobes; 4, Stamens; 5, Section of ovary, with style and stigma; all enlarged.

PLATE 6.

EKEBERGIA MEYERI, Presl.
Natural Order MELIACEÆ.

A large tree, trunk reaching up to 10 feet in circumference, with brownish-grey bark. Branches spreading, slightly drooping, bark grey like the trunk. Leaves unequally pinnate, borne on ends of the branches, and articulated to them, 10 to 14 inches long, including petiole; petiole terete, or slightly flattened above; leaflets opposite, in 4 or 5 pairs, glabrous, lighter beneath, ovate, entire, very acute,

unequally narrowed at base, midrib prominent beneath; Lamina 2 to 4½ inches long; 1–1½ inches wide; petiole of lateral leaflets, 1 to 1½ lines long, of terminal one, ½ to 1 inch long. Panicle axillary, including peduncle, about same length, or only slightly shorter than leaves, and borne with them on ends of branches; branches of panicle 1 to 1½ inches long, 8 to 15 flowered, bracteate. Bracts minute, 1 to 1½ lines long. Flowers greenish yellow, articulated to pedicel. Calyx cup shaped, 4 to 5 dentate, lobes slightly acute, not imbricate in bud, 1 line long. Petals 5, ovate, obtuse, spreading, tomentose on both sides, valvate in bud, 2 lines long. Stamens 10, united into a tube, tube entire, or very slightly toothed, woolly, bearing 10 sessile glabrous oblong anthers. Ovary surrounded by an annular disk, 4 celled, ovules in pairs; Style as long as stamens, glabrous; Stigma capitate, obscurely lobed. Fruit, a berry as large as a cherry, with pink tinge when ripe; 4, or abortively, 1–2–3 seeded, seeds exarillate, imbedded in a whitish pulp, cotyledons fleshy.

Habitat: NATAL: Inanda, October, *J. M. Wood*, No. 635. Berea, October, *J. M. Wood*, in Natal Government Herbarium, No. 1445. Berea, M. S. Evans, May. Also in Zululand.

A very handsome tree of ash-like appearance and habit, growing to a height of 35 feet. In spring covered with the light green young foliage, and panicles of whitish scented flowers. In autumn losing most of its leaves, but often then, if the weather is wet, again putting forth fresh leaves and flowers. Only inferior in appearance, size and habit among Coast trees to the Umkuhla, (Trichilia Dregeana). An allied species, Ekebergia capensis, is the "Essenwood" of the Dutch colonists, and this tree is usually called by the same popular name. The "Essenwood" is used in the Cape Colony for many purposes, carriage and wagon work, implements, &c.. &c.

Mr. W. Bazley, who has had considerable experience with Colonial woods, says of this tree. "I have heard it called wild Syringa, Mountain Ash, and sundry other names, but it is best known by its native name, Umnyamati. It grows to a large tree. I have seen trunks 5 feet in diameter. It is not a hard wood, nor can it properly be classed as a soft wood, it is not very strong, but makes good useful boards for inside work, such as doors, boxes, &c. It does not stand well exposed to wet or damp, in fact in such situations it decays in a short time; it has something of the grain of Ash. It is quickly bored by a small grub, if cut in the summer months, but this holds good of nearly all woods; there is a proper season to cut even the best of woods. It is a fine spreading tree, and looks well when in full foliage, but gaunt when bare in the summer months. I have seen a kind of caterpillar spinning silk in the trees, and they soon eat off all the leaves." The bark has been used for tanning leather, and the roots by the natives as a remedy for dysentery.

In his valuable "Report on the Natal Forests," Mr. H. G. Fourcade, says of this tree "A large tree, 2–3 feet in diameter, 50–80 feet high, with a straight cylindrical trunk and an ample crown, much resembling E. capensis. Bark brown-grey, moderately thick, cracked or even Wood light, soft, not strong, moderately elastic, open grained; rings obscure; medullary rays fine and close, intersected by broader concentric bands of white tissue; pores moderately small, distributed irregularly or in short radial lines; colour white, tinged with red; used for boards and other purposes; suitable for railway sleepers. Bark poisonous, used by the natives in small doses as an emetic."

Described and figured from a specimen gathered by Mr. M. S. Evans, on the Berea, May, 1896.

Fig. 1, end of branch, about two-thirds natural size; 2, Flower; 3, Section of flower; 4, Staminal tube opened; 5, Anthers, all enlarged; 6, Fruit; 7, Section of fruit, about natural size.

PLATE 7.

CRASSULA UMBRATICOLA, N. E. Brown.
Natural Order CRASSULACEÆ.

A low growing, glabrous, tuber bearing herb, from 2 to 6 inches in height. Tubers 1½ to 2 lines long, and wide, sparsely furnished with rootlets. Stem simple, erect. Leaves 6 to 8 or more, sometimes less than 6 in small specimens, chiefly clustered near apex of stem, 4½ to 19 lines long including petiole, 4 to 12 lines wide, opposite, petiolate, rotund, elliptical-ovate, or sub-reniform, obtuse, edge crenate, or crenato-dentate, cuneate at base, petiole 1½ to 8 lines long. Inflorescence cymose, few flowered, peduncles terminal, slender, 6 to 18 lines long, pedicels 2 to 6 lines long, very slender, bracts minute Calyx gamosepalous, tube short, lobes 5, acute, ½ to ¾ lines long. Petals ovato-lanceolate, acute, 1¾ to 2 lines long, ½ to ⅔ line wide, white, hypogynous scales minute. Carpels oblique, ovoid.

Habitat: NATAL: Drakensberg, in caves, 6 to 7000 feet altitude, January, *M. S. Evans*, No. 362; without locality Gerrard No. 1448; Van Reenen's Pass, Drakensberg, in shady ravine, 5 to 6000 feet altitude, *J. M. Wood*, No. 5961; in similar situations near De Beer's Pass, 5 to 6000 feet altitude, *J. M. Wood*, No. 5969; Orange Free State, *Cooper*, No. 1084.

This plant was first described by N. E. Brown, in Kew Bulletin for 1895, page 145.

A slender plant, delicate in texture, and is always found in very damp places, ledges of rocks, &c., &c., in deep shade. It is remarkable as being the only tuber bearing Crassula known to us.

Described and figured from Wood's, No. 5969.

Fig. 1, Plant natural size; 2, Flower; 3, Section of flower showing stamens and carpels; 4, Stamen, all enlarged.

PLATE 8.

ALBUCA CRINIFOLIA, Baker.
Natural Order LILIACEÆ.

The whole plant glabrous. Bulb globose or ovate. 2–3 inches in diameter, lying near the surface of the ground, and green in the upper portion. Leaves 8–12, lorate, dark green, concave at base, upper portion flat, veins numerous, but not prominent; 1½–3 feet long, 1½ inch wide at base, gradually tapering to an acute point. Scapes one or more to the bulb, 2–4 feet long, terete, green, floriferous portion 6–18 inches long, 6–20 or more flowered. Pedicels ascending, the lower ones reaching 3–4 inches in length, upper gradually shorter. Bracts lanceolate, lower ones 3 or more inches long, ½ inch wide at base, becoming gradually smaller to apex of scape, concave, acute at apex, green, Perianth erect; faintly scented, 1¼–1½ inch long, 3 outer segments spreading, flat except at apex, which

is slightly concave, and minutely ciliate; white with a broad green band in centre, reaching halfway down from apex; oblong 4–6 lines wide in centre; 3 inner ones erect, conniving, cucullate at apex, thickened and bilobed, nearly equalling the outer segments in length, and exceeding them in breadth; white with a broad green band in upper half. Stamens 6, all fertile, inserted under the ovary, the three opposite the outer segments of the perianth, erect, with small anthers, the three opposite to inner segments, divergent, and with larger anthers, and longer filaments; filaments of outer stamens subulate, concave, erect, of inner ones expanded at base, then suddenly folded inwards until the edges meet, and then opening out to apex; anthers 2 celled, introrse, versatile, the three opposite inner perianth segments confined by the cucullate apex of the segment. Style triangular with rounded angles, angles dark green, interspaces yellow; equalling with stigma the longer stamens. Stigma conical, 3 angled, ciliate on angles, yellow. Ovary 3 angled, angles rounded; seated on a trigonous stipes; base of ovary prolonged at angles into 3 bifid processes, the edges of which are continued upwards between the cells to near the apex of ovary. Ovules many, superposed, 2 series in each cell. Capsule 3 lobed. Seeds many, compressed, black.

Habitat: NATAL: Rocky bush near the river Umhloti, altitude 1200 feet. *J. M. Wood*, No. 750. One of the finest of the Natal Albucas, only perhaps excelled by A. Nelsoni, N.E.B, to which the present plant is very nearly related. It is not by any means common.

Drawn and described from plants in Botanic Gardens, Durban, which were brought from the locality where the species was first found. The flowers are banded with green, not reddish-brown as described in the Flora Capensis, though they assume the reddish tint when dry.

Fig. 1, Scapes with flowers and seed vessels, and portion of leaf, natural size; 2, Section of flower, showing stamen confined by cucullate apex of perianth lobe; 3, Ovary, style, and stigma; 4, Outer stamens, front and side view; 5, Inner stamens, front and side view; 6 Outer perianth lobes; 7, Inner perianth lobes; 8, Transverse and perpendicular sections of ovary, all variously enlarged; 9, Whole plant much reduced.

PLATE 9.

LOTONONIS GRANDIFOLIA, Bolus.
Natural Order LEGUMINOSÆ.

A procumbent herb. Stems often several from the same root, pilose, sometimes branching. Leaves trifoliolate, somewhat reflexed, pilose, especially on the under surface; 1 to 2 inches long, including petiole; petiole 6 to 9 lines long, pilose like the stem; leaflets obovate, acute, mucronate, pilose on both surfaces, but especially on veins beneath; terminal one 1 to $1\frac{3}{4}$ inches long, 6 to 12 lines wide, lateral ones a little shorter and narrower. Flowers in terminal 8 to 15 flowered racemes, the raceme with peduncle 3 to 4 inches long, the flowers including pedicels, 8 to 10 lines long, pedicel 1 to $1\frac{1}{2}$ lines long; bracts 3, subulate, minute, linear, central one as long as calyx tube, two lateral ones shorter. Calyx obconical, silky, 5 cleft, 4 to 6 lines long, segments acuminate, sub-equal in length, upper narrower, tube 2 lines long. Corolla papilionaceous; standard elliptical, narrowed to base, villous at back, 7 to 8 lines long; wings sub-spathulate, equalling standard, keel linear-lanceolate, sub-acute, straight, shorter than wings. Stamens 10, diadelphous, 9–1, connate for half their length, anthers similar. Style curved, Stigma minute. Ovary linear, pubescent.

Habitat: NATAL: On the side of a grassy hill near Van Reenen's Pass, Drakensberg, *J. M. Wood*, No. 4516, same locality, No. 5152.

Mr. Bolus, who described this species in the Journal of Botany, Vol XXXV, page 19, January 1896, says of it: "Noticeable in the genus by its large leaves. The two lateral calyx segments (which are actually longer from the base than the intermediate) are connate for about two thirds of their length."

We have found this plant in one locality only, but in looking over some old duplicates of Gerrard's in the Government Herbarium, several specimens of it were found, but without No., locality, or any information whatever. It will probably be found either in the Herbarium of Trinity College, Dublin, or at Kew, to both of which places Gerrard and McKen sent specimens of plants, and it will be interesting to know the locality in which Gerrard collected it.

The flowers are pale dull purple, varying in depth of tint, and it is in flower in December.

Drawn and described from specimens in the Government Herbarium.

Fig. 1, Stem with leaves and flowers, natural size; 2, Flower; 3, Calyx opened; 4, Corolla with parts separated; 5, Staminal tube opened; 6, Ovary; 7, Keel, side view; all variously enlarged.

PLATE 10.

EXCŒCARIA RETICULATA, Mull Arg.
Natural Order EUPHORBIACEÆ.

A tree of 10–20 feet in height. Twigs terete, glabrous, brown. Leaves alternate, petiolate, exstipulate, varying in shape from ovate, to ovate-oblong, or lanceolate, narrowing to an obtuse point at apex, obscurely crenato-serrate, and with minute teeth at the serratures, glabrous, lighter or sub-glaucous beneath, 2–3 inches long, $\frac{3}{4}$–$1\frac{1}{2}$ wide, petiole 2–4 lines long, with a gland in each axil. Inflorescence in axillary racemes, 1–2 inches long, composed of a large number of male flowers, in bracteate clusters, with a solitary, or sometimes two female flowers at or near base of peduncle. Male flowers; Sepals 3, small, sub-equal, connate at base, Stamens 3, filaments free, anthers 2 celled, didymous. Ovary o, Bract 1, enclosing 4–7 flowers, broadly oblong, truncate, lacerate, and tinged with pink at apex, and with 2 small sub-globose glands just above the base. Female flowers; Sepals 3, deltoid. lacerate and coloured at edge. Styles 3, divergent, strongly recurved, stigmatose on upper surface, and channelled in lower portion. Ovary 3 celled, cells 1-ovuled. Fruit a 3 celled fleshy capsule, which is 3 lobed, and the lobes strongly ribbed, forming a six angled fruit, the angles rounded.

Habitat: NATAL: Coast and midlands. Addington, *J. M. Wood*, No. 1012; Berea, *J. M. Wood*, No. 6259.

This tree was formerly known as *Sclerocroton reticulatus*, Hochst, but that genus, which contained 3 species only, all South African, has now been merged in *Excœcaria*, a genus which contains 60 or more species, having a wide distribution in tropical and sub-tropical countries. One of the species is known as the "Tallow tree" of China and Japan, and the fatty covering of the seeds is separated for use. Another species contains an acrid sap, and is a dangerous plant to handle. The well known "un-Tomboti" tree of Natal (E. Africana, Mull Arg) is another species, the wood of which is said to be very valuable, but its sap is very acrid.

The seeds of this species are often destroyed by a small grub, which having eaten the kernel, fills the interior of the shell, and causes it to spring from the ground in a remarkable manner, hence they have been called "jumping beans." The wood of *E. reticulata* is of little use, but the fleshy fruits were in the old days of the colony used for making ink, for which purpose they are very suitable. We have in the colony at least 3 other species, one or two of which have only lately been described and named. The native name is um-Vuma, or um-Hlampunzi, and the fruits are said to be eaten by antelopes.

Fig. 1, Twigs with leaves and flowers about natural size; 2, Bract with male flowers; 3, Male flower seen from above; 4, Section of male flower; 5, Bract opened out; 6, Bract front view; 7, Female flower; 8, Section of ovary; all variously enlarged.

PLATE 11.

OPHIOCAULON GUMMIFERA, Hook, f.
Natural Order PASSIFLOREÆ.

A climber widely spreading over trees and shrubs in woods. Dicœcious. Stems and branches green, striate, the lines filled with a white powdery substance which is readily removed by the fingers; terete, the branches cord like, very equal in diameter. Leaves alternate, petiolate, exstipulate, simple; petioles reaching to 4 inches long, with a small brownish gland at each side at base, and a larger one terminating the petiole at base of lamina; bluntly 3, or obscurely 5 lobed, the lobes rounded, emarginate, edge quite entire, glabrous, membranous, pale beneath, veins conspicuous on both surfaces; 3–4 inches long, and wide; tendrils axillary, simple. Inflorescence cymose, flowers several on a common peduncle which forms a tendril beyond the flowers; 1–3 inches long, green. Female flowers; Calyx 5 lobed, lobes ovate-oblong, erect; Petals 5, linear, inserted beneath the edge of the disk, and two thirds the length of calyx lobes. Ovary stipitate from a circular pitted disk, ovate; stigmas 3, sessile, expanded; staminodes 5, minute, flabellate. Male flowers similar to female ones, but a little larger, and the petals equalling the sepals in length; Stamens 5, central, about half as long as the petals; filaments subulate; anthers 2 celled, basifixed, introrse, equalling the filaments in length. Ovary none Fruit a capsule, much inflated, 3 valved, glabrous, green, subtended at base by the persistent calyx and corolla, 6 lined from base to apex. Seeds many, attached in double rows to each of the 3 placentas; ovate, compressed, pitted.

Habitat: NATAL: Coast to 2000 feet above sea level, or perhaps more.

A well known plant climbing to the tops of the trees in the woods, and covering many square yards with a dense mass of foliage. The whole plant is somewhat sticky or gummy, probably from the white powdery matter in the stems, and branches. It is known to the natives as im-Fulwa, and Mr. John Kirkman says of it: "Used as an emetic, also as a soothing tonic for children and cattle. The whole of the plant is used." It is not used by Europeans in any way, so far as we are aware.

Drawn and described from specimens gathered on Berea, January, 1898.

Fig. 1, Branch of male plant with leaves and flowers; 1a, Branch of female plant with fruit; 2, Female flower; 3, the same, calyx removed; 4, Section of ovary; 5, Female flower, front view; 6, Male flower; 7, the same, calyx and corolla removed; 8, Calyx and corolla of male flower, opened out; 9, seed; all variously enlarged.

PLATE 12.

ASTER (DIPLOPAPPUS) ASPER, Less.
Natural Order COMPOSITÆ.

An erect plant with white or pale blue flowers, and yellow disk. Roots tuberous, the tubers fusiform, 1 inch or more long, 2 to 3 lines wide. Stems erect, one or more from same root, usually simple, but occasionally branched, especially in the variety "pleiocephalus," scabrous, pilose, ending in a long or short 1 headed peduncle, 6 to 12 inches or more high. Leaves ovate-oblong, oblong-lanceolate, or broadly linear, 3 to 5 nerved, sessile, entire, or coarsely few toothed, scabrous on both surfaces, pilose and ciliate, 2 to 5 inches long, $\frac{1}{4}$ to 1 inch wide. Heads about 100 flowered, Rays 15 to 25. Involucre of many acuminate, flat, dorsally pubescent scales, with scarious margins. Ray florets; female 1 seriate, corolla ligulate; disk florets perfect, tubular, 5 lobed. Anthers without tails. Style arms lanceolate, pubescent. Pappus of many unequal serrate bristles. Achenes pubescent.

Habitat: NATAL: Common in open ground.

A well known plant found all over the Colony, from the Drakensberg to the sea level. The flowers vary in colour from white to sometimes deep blue, the stems are usually one headed, but in the variety "pleiocephalus" found in the Midlands, they are much branched, each peduncle bearing a single head. It is known to the natives as "um-Hlungwaan" and the tuberous roots are used as a remedy for snake bites; they have also been used for this purpose by colonists, when dogs have been bitten, and it is said with very good effect,

Drawn and described from specimens in the Government Herbarium.

Fig. 1, Stem with leaves and flowers, natural size; 2, Disk floret; 3, Ray floret; 4, Involucral bract; 5, Pappus bristle; 6, Staminal tube opened; 7, Ovary Style and Stigma; 8, Style arms; all variously enlarged.

PLATE 13.

JACQUEMONTIA CAPITATA, G. Don.
Natural Order CONVOLVULACEÆ.

A climbing plant with small blue flowers. Stems diffuse, branches terete, pilose. Leaves cordate, acute, entire, herbaceous, finely pilose, variable in size from $\frac{3}{4}$ inch to 2 inches long, $\frac{1}{2}$–2 inches wide. Inflorescence in axillary and terminal bracteate heads; bracts linear, acute, much more distinctly pilose than leaves; 2–3 lines long, $\frac{1}{2}$ line wide; pedicels 1 line long. Calyx 5 parted nearly to base; lobes linear-lanceolate, hirsute, persistent, 2–3 lines long, 1 line wide. Corolla funnel shaped, limb 5 lobed, or almost entire, 3–4 lines long. Stamens 5, included, sub-equal; filaments glabrous, dilated at base; anthers oblong, 2 celled. Ovary globose, 4 celled, 4 ovuled; style filiform; stigma bilobed, lobes oval. Capsule sub-globose, 4 celled, 4 seeded; seeds trigonous.

Habitat: NATAL: Umlaas native location, under 1000 feet altitude. *J. M. Wood*, No. 4573.

This is the only member of the genus occuring in South Africa, and so far has only been found in the locality above named, though further investigation will doubtless discover other localities for it. The colour of the flowers is a beautiful

dark blue, the middle portion of each lobe of a lighter shade. The heads contain each about eight or ten flowers, only one of which is open at one time. The anthers are white. The other members, of the genus numbering about 35 species, are natives of tropical and sub-tropical America, and the present plant has been found in Central Africa. Its nearest allies are the genera Ipomœa and Convolvulus, from both of which it differs in having a bi-lobed stigma with oval lobes, the same organ in Ipomœa being always capitate, and often bi-globose; in Convolvulus linear.

The specimen figured was grown in the Botanic Gardens, Durban, from seed of *Wood's*, No. 4573, which was sent to him by Mr. W. W. Cato of Bellair.

Fig. 1, Branch, natural size; 2, Corolla opened; 3, Calyx opened; 4, Stamens front and back view; 5, Section of calyx and ovary; all variously enlarged.

PLATE 14.

CARISSA GRANDIFLORA, AD.C.
Natural Order APOCYNACEÆ.

A strong growing shrub, 10 to 15 feet high, of compact habit, with milky juice, bark of trunk and older branches brown; young branches green, terete, glabrous, compressed at nodes; the whole plant branching dichotomously, and bearing regularly forked and twice forked spines at nodes, Leaves opposite, glabrous, exstipulate, shortly petiolate, dark green above, lighter beneath; mid-veins prominent beneath, lateral obscure; ovate to broadly ovate, entire, mucronate; petiole 2 to 3 lines long, lamina $\frac{3}{4}$ inch to 3 inches long, $\frac{1}{2}$ to 2 inches wide. Calyx gamosepalous, 5 parted, lobes unequal, 3 large, 2 small, margins recurved, minutely glandular at base of lobes inside. Corolla gamopetalous, white, fragrant, salver shaped, tube cylindrical, hairy within, swollen at base, lobes 5, obovate, varying, from $\frac{1}{2}$ to $1\frac{1}{2}$ inches in length, and one third longer than the tube. Stamens 5, included, inserted on the corolla tube, filaments very short, anthers lanceolate. Ovary ovate, 2 celled, glabrous, few ovuled; style included, cylindrical; stigma clavate, hairy at apex. Fruit a one or few seeded, ovate, bright scarlet berry, up to 2 inches long, and 1 inch wide, with milky juice. Seeds peltate, scabrous.

Habitat: NATAL: Edge of woods, and in woods near the sea beach.

Drawn and described from specimens gathered near Durban.

We observe in this plant two kinds of flowers, which are always borne on different plants. The one form, which never bears fruit, and is functionally male, has generally larger flowers, and is structurally different in having larger anthers and stamens much longer than the style. In the other, or functionally female form, the stamens are the same length as the style, but the anthers are smaller, and though always present, never seem to contain pollen. We give drawings of both kinds of flowers. This plant is therefore practically unisexual, though from the fact that both male and female organs are always present in both forms, and also that among Natal plants, as far as is known to us, this peculiarity is unique in the Order, we are inclined to think this unisexuality has only been comparatively speaking lately acquired. Fertilization, which is of course dependent on outside agencies, is we think secured by visits of "Hawk moths." The favourite habitat of this valuable hedge and fruit plant is in the bush bounding the beach. It will, though, grow and bear fruit (provided both kinds of flowers are present) at much

higher altitudes. We have known it to fruit abundantly under cultivation at 2000 feet above sea level, and have seen plants which have stood the winter at 4000 feet. It is certainly the best hedge plant in Natal, forming when regularly cut an impenetrable fence. It is often increased by layers, and when propagated in this way, growers should be careful to get a larger proportion of the functionally female plant (i e. the one in which the style and stamens are of equal length) if they wish for an abundance of fruit, though of course there must be a proportion of the other form of flower. Though this fruit when fully ripe is delicious and very valuable, the Order Apocynaceæ is a doubtful one, containing a number of very poisonous plants, amongst them is *Cerbera Tanghin*, the "Ordeal tree" of Madagascar, and *Strophanthus Kombe*, which is supposed to have entered into the composition of the Bushman's arrow poison, and the seeds of which are now used medicinally at Home. Native name "Amatungulu."

Fig. 1, Twigs with leaves, flower and fruit; 2, Corolla, front view; 3, Section of corolla, short style form; 3a, Same, long style form; 4, Section of base of corolla showing stamens; 5, Calyx and style; 6, Calyx, opened out; 7, Stamen; all about natural size.

PLATE 15.

IPOMŒA SIMPLEX, Thunberg.
Natural Order CONVOLVULACEÆ.

Tuber globose or sub-globose, $\frac{3}{4}$ to $1\frac{1}{4}$ inches diameter, brown, rooting at base and sides. Stem simple, solitary, rooting at base, 1 to 4 inches high from tuber to lowest leaf, lower portion rough and wrinkled near base, terete above, striate, glabrous. Leaves alternate, linear or linear oblong, tapering at base to a short winged, concave petiole, edge coarsely and distantly toothed, or sub-entire, veins and veinlets conspicuous on both sides, glabrous, 1 to $2\frac{1}{4}$ inches long including the short petiole. Flowers solitary in axils, bracteate, bracts 2, linear, sometimes reaching half way along the calyx lobes, but usually shorter. Calyx 5 parted to base, lobes lanceolate, acuminate, strongly nerved, membranous edged, minutely glandular, in æstivation 3 outer, 2 inner; 6 to 8 lines long. Corolla gamopetalous, 5 fid. Campanulate, Stamens 5, inserted at base of Corolla tube; filaments filiform half as long as corolla; anthers 2 celled, versatile. Style filiform, Stigma bi-globose. Ovary superior.

Habitat: NATAL: Inanda, 1800 feet altitude, November, *J. M. Wood*, No. 411. Clairmont, 20 feet altitude, October, *J. M. Wood*, No. 6133.

A low solitary perennial tuber bearing plant, with white flowers; the tubers are eaten by native and Indian boys, which perhaps in some measure accounts for the rarity of the plant, as on sending to the place a few days after the specimens had been collected, for the purpose of obtaining seed vessels, the messenger found that the tubers had been all dug out, presumably by Indian boys. The natives know it as ama-Gonzi.

Drawn and described from *J. M. Wood's*, No. 6133.

Fig. 1, Plant, natural size; 2, Corolla, laid open; 3, a stamen; 4, Ovary, style and stigma,

PLATE 16.

STRYCHNOS GERRARDI, N. E. Brown.
Natural Order LOGANIACEÆ.

A tree 30–40 feet high, without thorns. Bark grey, moderately thin and even, twigs terete, opposite. Leaves opposite, petiolate. elliptical or oblong-obovate, apex obtuse, base rounded and tapering into the short petiole, entire, glabrous, 3 veined, veins conspicuous on both sides, lateral ones joining 2–4 lines above the base, dark green and shining above, lighter and duller beneath, petiole 1–3 lines long, lamina 1–4 inches long. Inflorescence in axillary cymes or fascicles, the branches 3–5, but usually 3 flowered, peduncles 1–2 lines long, pedicels $\frac{1}{2}$–$1\frac{1}{2}$ lines long. Calyx of 4 oblong, obtuse sepals, 1–$1\frac{1}{4}$ lines long, with a sub-deltoid, ciliolate bract at base. Corolla gamopetalous, tube cylindrical, a little longer than calyx, with a dense ring of white erect hairs in throat, glabrous externally, lobes 4, ovate, acute, spreading, or a little recurved, 1–$1\frac{1}{4}$ lines long. Stamens 4, inserted on corolla at throat, anthers oblong, 2 celled, sagittate, sub-sessile, and very slightly exserted. Ovary 2 celled, many seeded, pilose with long white hairs in upper half; style continuous with the ovary, obtuse; ovules attached to a thick central placenta. Fruit a hard shelled, yellow, globose, berry, containing several large seeds, which are covered with a sweetish pulp; about 3 inches in diameter.

Habitat: NATAL: Coast districts generally, common.

Drawn and described from specimens gathered on Berea, December, 1897.

This tree was formerly known in Natal as S. McKenii, but it does not appear to have been described under that name, which was simply a manuscript one of Gerrard's. It was described in the Kew Bulletin for 1896 under the name above given, which is therefore now the correct one. The genus Strychnos is a large one, widely dispersed in the tropical regions of the world. We have in Natal three named species, and one or two others which are not yet described. Generally speaking the genus is a dangerous one; the poison Strychnine being obtained from a member of the genus, viz., S. nux-vomica. The fruits of the species here figured, are, however, freely eaten by children and natives, the only part eaten being the pulp in which the seeds are imbedded. The tree has a rather peculiar habit, the secondary branches often growing upright from the primary ones, by which feature the tree may often be recognised at a distance. So far as we know the wood is not at all used for any economic purpose.

Fig. 1, Branch with flower and leaves; 2, Flower, side view; 3, Flower, full view; 4, Flower opened, showing stamens; 5, Calyx, ovary and style; 6, Section of ovary; 7, Stamen; all variously enlarged.

PLATE 17.

DIOSCOREA CRINITA, Hk. f.
Natural Order DIOSCOREACEÆ.

A dioecious climber, Tubers several to each plant, often forked, or even palmate. Stems slender, wide climbing, much branched, terete, finely pubescent. Leaves alternate, palmate, lobes 5, shortly stalked, one or more of the lower ones occasionally divided, the divisions stalked or not; obovate, ovate or narrow oblong, entire, undulate, obtuse at base, conspicuously mucronate, the mucro long and hair-like, pubescent on both surfaces, shining, especially so beneath, veins conspicuous,

varying in length including petiole, from 1–10 inches; the largest ones occurring only near base of female plants, and usually not more than one or two on each plant. Flowers, Male in axillary racemes, 2–6 in each axil, $1\frac{1}{2}$–2 inches long, the flowering branches usually terminating in a leafless compound raceme; rachis pilose, many flowered, flowers greenish white, pedicels short, bract ovate, acuminate, pubescent, 2–5 lines long, twice to thrice longer than flowers. Perianth 6 lobed, lobes oblong-acuminate, in two rows, outer broader, tomentulose, inner narrower, sub-glabrous. Perfect stamens 3, with 3 staminodes, inserted on base of perianth lobes, and opposite to them filaments very short, anthers small, ovate, 2 celled, staminodes sub-spathulate, larger than fertile stamens, opposite to outer lobes of perianth. Ovary abortive. Female flowers in axillary spikes, 1–3 together, rachis densely pilose, laxly flowered, lengthening in fruit, bract lanceolate, acuminate, very much longer than perianth. Perianth 6 parted, lobes ovate, acute. strongly inflexed at apex, 3 outer ones pubescent, inner ones glabrous, each enclosing a minute barren anther at base. Ovary inferior, triangular, densely pilose, stigmas 3, recurved. Capsule oblong, broadly 3 winged, 3 celled, 1 inch long, 7–8 lines wide. Seeds discoid, winged at one side, glabrous.

Habitat: NATAL: Coast district.

Drawn and described from specimens gathered near Durban, February, 1898.

It will be noticed that in several points the description given above differs from the description given by the author of the species in the Flora Capensis. The leaflets are there said to be ovate, and in *Wood's* No. 1618, one of which is in the Government Herbarium, and from which gathering the species was probably described, they are so, but in the variety figured here, they are narrow oblong; both varieties are to be found near Durban, but there does not appear to be any other appreciable difference between the two varieties. Then, in the Flora Capensis, no mention is made of the staminodes, which are undoubtedly present in both forms. We find that in the dried specimens these staminodes are difficult to detect, but in the fresh plant they are quite conspicuous; we find also that the fresh flowers are visited by a minute insect, which seems quickly to devour these delicate organs. The genus Dioscorea contains about 150 species, of which 10 or 12 are natives of Natal; many of the species are cultivated for their esculent tubers, and are popularly known as Yams, and in most tropical countries they form an important article of diet for all classes, and some of the varieties are much esteemed. The Natal species, so far as we are aware, have never been exploited in this direction, and as the juice of the tubers of this species produces itching when applied to the skin, it is not likely that they will be found to be of much value as a culinary vegetable. A rough experiment which we have made with them shows that they contain little if any starch.

Fig. 1, Branch of male plant with flowers and leaves.
2, Branch of female plant, with flowers, leaves, and young fruit.

MALE PLANT.

Fig. 3, Flower.
4, Flower with bract removed.
5, Outer perianth lobe with anther
6, Inner perianth lobe with staminode.
7, Bract.

FEMALE PLANT.

Fig. 13, Flower with bract.
14, Outer lobe of perianth with abortive stamen.
15, do. side view.
16, Inner lobe of perianth, front view.

MALE PLANT.

8, Stamen, front view.
9, do side view.
10, Staminode, front view.
11, do. side view.
12, Abortive stigma.

FEMALE PLANT.

17, Inner lobe of perianth, side view.
18, Stamen.
19, Abortive stamen.
20, Bract.
21, Plan of flower.
22, Style, elevation.
23, Style, plan.
24, Section of ovary.
25, Fruit; all variously enlarged.

26, Leaf from base of female plant.
27, Obovate leaf as described in the Flora Capensis, and which is perhaps the most common variety, both about natural size.

NOTE.—In the plate the fruits are shown as pendant, and in the young state they are so, but when nearly mature they become quite erect on the peduncle.

PLATE 18.

APODYTES DIMIDIATA, E. Meyer.
Natural Order OLACINEAE.

A tree with trunk 1–3 feet in diameter, 20 to 50 feet in height, "Bark greyish white, thick, smooth, marked in patches and rings by parasitic lichen" (Fourcade.) Twigs terete, very light coloured. Leaves alternate, petiolate, exstipulate, elliptical, ovate-elliptical, or oblong, entire, rounded at apex and base, glabrous above, minutely pubescent beneath, margin thickened and a little recurved, coriaceous, midrib prominent beneath, lateral veins obscure; 1–1¾ inch long, ½–1 inch wide; petiole thickened, 3 lines long. Panicles terminal, much branched, longer than the leaves. Calyx small, cup shaped, indistinctly 5 lobed, bract minute, soon withering. Petals 5, free, spreading, narrow oblong, glabrous, 1¾ line long, ½ line wide. Stamens 5, alternate with petals, free, filaments compressed, white; anthers 2 celled, sagittate, affixed at the sinus. Ovary superior, conical, 1 celled, 2 ovuled, style white, stigma obtuse. Fruit baccate, ovate or reniform, sub-compressed, oblique, and furnished on one side with a fleshy appendage; 2–3 lines long, 3–4 lines wide. Seeds 2, pendulous.

Habitat:—Natal. Coast to at least 2000 feet above sea level.

Drawn and described from specimens gathered near Durban, January, 1898.

This is the well known "White Pear," and is known to the natives as um-Dagaan, the wood is said by Mr. Fourcade to be "fairly durable, preferred by wagon makers to any other wood for felloes," and by Messrs. C. & A. Yonge to be "a good useful wood for all the larger kinds of engraving," Mr. Bazley says of it "inclined to crack in seasoning," and this is our experience also.

Fig. 1, Branch with leaves, flowers and buds, about natural size; 2, a Flower; 3, Pistil and calyx, petals and stamens removed; 4, a Stamen and two petals; 5, Stamen, front and side view; 6, Fruit; 7, section of young fruit.

PLATE 19.

BAPHIA RACEMOSA. Hochst.
Natural Order LEGUMINOSAE.

A small tree sometimes 20 feet high, much branched even from close to the ground, branches usually erect; bark dark brown, thin, smooth; young twigs

pubescent. Leaves alternate, petiolate, stipulate, lanceolate to ovate, acuminate, entire, glabrous above, minutely downy beneath, lamina 2–3½ inches long, ¾–1½ inches wide, petiole ½–¾ inch long; stipules 2, minute, membranous, deciduous, subulate. Inflorescence in axillary and terminal few flowered racemes, which are 1½–2 inches long, pedicels 3–4 lines long, with 2 bracteoles at base of each flower, bracteoles minute, linear. Calyx bilabiate, lobes at first reflexed or intruse, of thin texture, upper ones 2 dentate, lower entire, corolla papilionaceous, standard sub-orbicular, shortly clawed, emarginate, spreading; wings oblong, clawed, widely spreading; keel deflexed, concave. Stamens 10, free, but slightly connate at extreme base, anthers small, ovate; Style falcate, acuminate. Stigma minutely capitate, ovary silky. Legume compressed, sub-falcate, veiny, dark brown, 1–2 seeded.

Habitat:—Natal. Coast districts, reaching to at least 2000 feet altitude. Described and figured from tree in flower on Berea, November, 1897.

This plant has already been described and figured in Harvey's Thesaurus Capensis plate 20, but as we found several differences, we have been induced to figure it again, especially as Harvey's description does not include the legume. It is not as there stated a climber, but an erect tree, or shrub. In the plate in Thes. Cap. the pedicels are represented as bracteate in the middle, but these bracteoles we have not seen, and in all the specimens we have examined they are certainly absent. The calyx also is described and figured as having its lower lobe tridentate, but in our specimens it is quite entire in all young specimens. The apparent division in the lobe being caused by splitting when at maturity. The tree is a very handsome one when in flower; the flowers are white, with an orange patch at base of standard, and they are strongly violet scented, hence its popular name in Natal " Violet Pea." The wood is scarcely large enough to be of much use as timber, but it makes good disselbooms when of sufficient size, and the young shoots, which are very supple, were in the early days of the colony used for making wagon and cart tents, and for wattling, but it is very liable to attacks of insects, unless very carefully seasoned. Mr. Bazley says that it forms " the best wood in Natal for hoe handles, etc., but the sticks should be cut in the winter, the bark removed at once, and kept until they are seasoned, when they are found to be strong and lasting." It was formerly known as Bracteolaria racemosa, but the genus Bracteolaria has now been united with Baphia. The native name is isi-Fiti.

Fig 1, Twigs with Flowers and legumes, about natural size; 2, Petals, a standard b.b. wings, c. keel; 3, Flower with petals removed; 4, Ovary; 5 Stamens, all variously enlarged.

PLATE 20.

HERMANNIA SANDERSONI, Harv.
Natural Order STERCULIACEAE.

A many stemmed herbaceous perennial. Root woody. Stems simple or sub-simple, erect; densely clothed with stellate hairs. Leaves few, alternate, stipulate, shortly petiolate, or sub-sessile, elliptical, ovate or sub-rotund, crenato-dentate, veins very prominent beneath, stellato-hispid on upper surface, lighter coloured and densely tomentose beneath, with stellate hairs; ½–2 inches long, 5 lines to 1½ inches wide; Stipules ovate, or ovate lanceolate, acuminate, stellato-hispid, 2–4 lines long. Peduncles axillary and terminal, 2–3 lines long, usually 2, but sometimes 3 flowered, pedicels 3–6 lines long, bracteate at base, densely stellato-hispid,

bracts linear, much shorter than pedicel. Calyx campulate, 5 toothed, teeth acuminate; strongly ribbed, membranaceous, stellato-hispid. Petals 5, sub-orbicular, clawed: claw shorter than lamina, 3-ribbed. Stamens 5, hypogynous, filaments oblong, narrowing to base, membranaceous; anthers 2 celled, dorsifixed, cells acuminate. Styles 5, linear, connate but separable, stigmas obtuse. Ovary 5 celled, 5 angled, muricate, and very hispid with numerous small stellate hairs.

Habitat: NATAL: Inchanga, 2000 feet altitude, October, *J. M. Wood*, No. 6536, without locality, Miss Stainbank, in Herbarium, *J. M. Wood*, No. 3410.

Professor Harvey ,in a note to the description of this plant says, "not nearly related to any other species," and in this we quite agree. It appears to be very local; we have not met with it in any other place but in the one cited, and it is quite probable that both Miss Stainbank and Mr. Sanderson collected it in the same locality. It is an attractive plant and quite worthy of cultivation. The protuberances on the fruit, each having a stellate hair at apex, are somewhat singular.

The genus Hermannia including Mahernia, which is now united with it, contains from 110 to 120 species, of which three are American, four Tropical African and Arabian; the remainder all South African.

Fig. 1, Plant and fruiting stem, natural size; 2, Flower, front and side view; 3, Stamens and style, sepals and petals removed; 4, Calyx, opened out; 5, Stamens, outside view; 6, a Stamen, front and side view; 7, Fruit; 8, Section of fruit; 9, Protuberance on the fruit.

PLATE 21.

SAMOLUS POROSUS, Thb.
Natural Order, PRIMULACEÆ.

A tall, almost leafless herb, with pink and white flowers, growing on muddy shores near the sea. Stems few or many, from a thickened, short, creeping rhizome, erect, branching, terete, glabrous and shining, with small bract-like depauperated leaves at intervals of 1½ to 3 inches apart. Leaves very few, in many plants at time of flowering quite absent, when present confined to the very base of the stem, or rhizome, occasionally appearing where a branch or stem has been broken or damaged, oblanceolate, entire, glabrous, ½ to 1¼ inches long, 3 to 10 lines wide. Inflorescence in axillary and terminal simple, or branching, few flowered racemes. Calyx gamosepalous, deeply 5 cleft, lobes ovate-oblong, acute, persistent, glabrous, 2 lines long, tube ob-conical, equalling calyx. Corolla gamopetalous, tube cylindrical, a little swollen in centre, lobes 5, spreading, ovate, acute, or obtuse, with 5 subulate scales alternating with the lobes, inserted below the throat, and reaching half way along the lobes; corolla including tube, 3 lines long. Stamens 5, in throat, opposite lobes of corolla, sub-exserted anthers 2 celled, apiculate. Style shorter than corolla. Stigma obtuse. Ovary half inferior, 1 celled, many seeded, opening by 5 valves at apex. Seeds minute.

Habitat: NATAL: On shores of Natal Bay, July, *J. M. Wood*, No. 1940.

Drawn and described from specimens collected June, 1896.

The genus Samolus includes about 8 species only, two of which are natives of Natal, viz., S. Valerandi, a cosmopolitan species, and S. porosus, which is confined to South Africa, and is remarkable for the almost total absence of leaves, at any rate at the flowering season, and for its pretty, bell shaped, pinky white flowers.

Fig. 1, Plant reduced; 2, Flower, side view; 3, Flower from above; 4, Corolla opened; 5, Lobe of corolla showing relative length of scales; 6, Flower, corolla removed; 7, a Stamen; 8, Section of ovary; all variously enlarged.

PLATE 22.

ECTEINANTHUS ORIGANOIDES, T. And.
Natural Order, ACANTHACEÆ.

A tall, erect under shrub, growing at edges and inside bush, forming in places dense thickets. Stems copiously branched, and swollen at nodes, older ones green and almost glabrous, shining, younger frequently channelled on each side, with pilose hairs in the groove, and also at nodes, which in the lower portion of the stem are 4 to 6 inches apart, in upper portion and branches, $\frac{3}{4}$ to 2 inches apart. Leaves opposite, petiolate, exstipulate, broadly ovate, acuminate at apex, tapering to base, upper surface pubescent, with whitish scattered hairs; midrib and veins more thickly covered with similar but longer hairs, pubescent beneath, 2 to 7 inches long, 1 to 5 inches wide; petioles deeply channelled above, rounded beneath, densely pilose, $\frac{1}{4}$ to 4 inches long. Inflorescence in axillary and terminal bracteate spikes, the upper ones often branched, from $1\frac{1}{4}$ to 4 inches long, rachis terete, hispid with glandular hairs, and with a pair of bract-like depauperated leaves at each node, which become smaller upwards; bracts 3, lateral, subulate, medial lanceolate, pilose with long white glandular hairs; 2 to 3 lines long. Calyx 5 parted, nearly to base, lobes subulate, equal; a little longer than the bracts, and like them glandularly pilose. Corolla gamopetalous, bi-labiate, lower lip largest, deflexed, minutely 3 fid at apex, with a large longitudinal projection on each side, which is again cross ribbed and coloured pink in the depressions, the wings ribbed; upper lip nearly erect, concave, minutely 2 fid, white; with a ring of hairs in the throat. Stamens 2, on corolla at throat, ascending under its vaulted upper lip; anthers 2 celled, cells superposed. Style 1 glabrous. Stigma obtuse, Ovary superior, on an annular disk, 2 celled, cells 2 ovuled. Capsule clavate, compressed, 4 seeded, the two lower ones frequently abortive. Seeds plano-compressed, rugose.

Habitat: NATAL: without locality. *Gerrard*, No. 1897, Berea, 150 feet altitude, May, *J. M. Wood*, No. 3945.

This is a rather remarkable plant, flowering only once in several years, usually 4 to 6 years elapsing before flowers again appear, though in the interval a stray plant or two may be found in flower, but when the year of flowering arrives it is general all over the coast districts. It is almost confined to the coast, not reaching to more than about 2000 feet above sea level. The natives say that when it flowers honey is always very plentiful, and from what we hear from Europeans, this is correct. Native name u-Bomaan.

Described and figured from a plant found in flower in the Berea bush, May, 1896.

Fig. 1, Leaf and inflorescence, about natural size; 2, Flower, side view; 3, Flower, front view; 4, Corolla open to show stamens; 5, Depauperated leaf, front and side view; 6, Bracts; 7, Ovary; 8, Calyx; 9, Capsule, front and side view; 10, Section of capsule, showing seed; 11, Capsule opened; all variously enlarged.

PLATES 23 & 24.

BRACHYLAENA DISCOLOR, D.C.

Natural Order COMPOSITAE.

A small dioecious tree 15 to 20 feet high, with thin even bark. Leaves alternate, petiolate, oblong or elliptic obovate, obtuse or sub-acute, repand, and variably denticulate, cuneate at base, veins prominent beneath, midvein strongly marked above, lateral ones obscure, dark green, glossy and shining above, densely whitish tomentose beneath, 3 to 4½ inches long, 1 to 1½ inches wide. Male and female trees similar, differing only in the inflorescence. Panicles axillary and terminal. Male heads about 20 flowered, involucral scales in 5–8 rows, cobwebby, medial largest, Corolla tubular, 5 lobed, Anthers tailed at the base, Stigma clavate, Pappus of many serrate bristles, sub 2 seriate. Female heads 3–5 flowered, involucral scales woolly at base, in 4–5 rows, inner row largest and glabrous, all minutely ciliate, Corolla as in male, Anthers abortive, linear, tailed, separate; Style 2 fid, with short and broad branches; Pappus as in male; Achenes pubescent.

Habitat: NATAL: Coast and midlands. Drawn and described from specimens gathered near Durban, July, 1897.

A tree of the coast and midlands, called by the natives i-Pahla. The male and female trees may easily be distinguished by the former having much looser and fewer flowered panicles. As will be seen from the drawings, the involucres of the male flowers are broader than those of the female, and contain many more florets. The wood is said by Mr. Fourcade to be "durable exposed to the weather; used for axles, for tongues, spokes, etc, excellent for boat builders, as it stands in water better than Red Milkwood, though it does not hold nails as well."

It does not grow to a large size. An allied species, B. elliptica, Less, is we have been informed one of the best Natal woods for posts etc., as it is not liable to rot in the ground. It is found in the uplands reaching to at least 4000 feet above sea level.

Plate 23, Fig. 1, leaves and panicle natural size; 2, head of female flowers natural size; 3, Floret with pappus; 4, Corolla opened showing rudimentary stamens; 5, Ovary, style and stigma.

Plate 24, Fig. 1, Leaves and panicle male plant natural size; 2, Head enlarged; 3, a Floret with pappus; 4, Corolla and staminal tube opened showing anthers joined together; 5, Style and abortive Stigma.

Note.—In generic name as printed on Plates 23 and 24 the "y" has been accidentally omitted; the spelling above given is correct.

PLATE 25.

GARDENIA CITRIODORA, Hooker.
Natural Order RUBIACEAE.

An unarmed glabrous shrub several feet high, branches terete, younger ones green, compressed, swollen at nodes, glabrous; Leaves petiolate, elliptic-oblong, or oblong lanceolate, entire, acute, glabrous, dark green above, lighter beneath, 2–6 inches long, 1–1¾ inches broad, petiole 6–8 lines long, channelled above; Stipules subulate from a broad base, 4–6 lines long; Inflorescence in axillary corymbs which are much shorter than the leaves. Calyx tubular, 5 fid, teeth acute, including pedicels and teeth 6 lines long, bracts 2 to 3, subulate; Corolla salver shaped, 1 inch long, tube 2–3 times longer than calyx; widening below throat; lobes 5, ovate, obtuse, externally glabrous, with a few hairs in tube,, spreading to ⅞ inch diamater, white, lobes externally tinged with pink; Stamens 5, subsessile on expanded portion of tube, anthers linear, just reaching sinuses of limb. Style exserted, gradually thickened upwards, striate, Stigma 2 lobed, lobes short, stigmatose and yellow within. Ovary 1 celled but appearing 2 celled by the placentas meeting in the centre, many ovuled. Fruit, a berry as large as a small cherry.

Habitat: NATAL: near Durban, and down the coast as least as far as Umzimkulu, but rare or absent North of Umgeni.

Drawn and described from a plant which flowered in the Botanic Gardens, August, 1897.

This plant is known to many colonists as "Wild Coffee," and the berries have for many years been used as a substitute for coffee, chiefly by natives, and small farmers on the South Coast. The shrub is a handsome one, and the white flowers are very fragrant.

Fig. 1, Flowering branch natural size; 2, Flower with calyx and bracts; 3, Corolla opened, showing stamens in situ; 4, Stigma; 5, Longitudinal section of ovary; 6, Cross section of ovary; 7, Stamens, all variously enlarged.

PLATE 26.

OXYANTHUS NATALENSIS, Sond.
Natural Order, RUBIACEÆ.

A shrub or small tree with white flowers. Twigs ending abruptly at the uppermost pair of leaves and terminating in a pair of stipules which are firmly adherent to each other by their inner faces; compressed, green, glabrous. Leaves opposite, petiolate, stipulate, elliptic-oblong, shortly acuminate, mucronate, entire, glabrous, veins conspicuous, especially so beneath; 6–8 inches long, 2¼–4 inches wide; petiole 3–6 lines long, channelled above; stipules ovate-acuminate, twice as long as the petiole. Inflorescence in axillary corymbose racemes, which are sometimes paniculate. Calyx gamosepalous, campanulate, tube 2–3 lines long, limb 5 toothed, teeth linear-acuminate, shorter than tube. Corolla gamopetalous, white, tube slender, 2–3 inches long, pilose internally, lobes 5, lanceolate, reflexed, 7–8 lines long. Stamens 5, on corolla at throat, filaments short, anthers linear, exserted. Ovary inferior, 2 celled, many seeded. Style filiform, stigma clavate, exserted. Fruit an ovate many seeded berry, areolate at apex, 1½–1¾ inches long, ¾–1 inch wide.

Habitat: NATAL: Coast lands.

Drawn and described from specimens gathered near Durban, January, 1898.

An exceedingly handsome shrub of good habit, growing generally under large trees in those parts of the coast bush which are free from scrub and undergrowth. The leaves are peculiarly large and shining, the corolla tube is very long, and the flowers are probably fertilised by Hawk moths, as we have not noticed any insect visitors during the day time. The genus contains 18 species, all South African, with one exception, which is a native of Cuba. We have 3 species in Natal, of which this is the handsomest. Well worth cultivation. It has no economic value so far as we are aware.

Fig. 1, Twigs with leaves and flowers; 2, Corolla, tube opened, upper portion; 3, Stigma; 4, Perpendicular section of ovary; 5, Cross section of ovary; 6, Fruit.

PLATE 27.

ALBIZZIA FASTIGIATA, Oliv.
Natural Order LEGUMINOSÆ.

A tree. Bark even, gray. Twigs and petioles finely pubescent. Leaves alternate, abruptly bipinnate, pinnæ opposite, in 4 to 8 pairs; common petiole 4 to 6 inches long, with a large prominent oblong gland on upper side $\frac{1}{4}$ to $\frac{1}{2}$ inch above the swollen base, and a smaller and circular one at base of the terminal pair of leaflets, both glands with a central depression, secondary petioles swollen at base, the lowest pair of leaflets being just above the swollen portion; ending in a mucro between the terminal pair of leaflets. Leaflets opposite, sessile, in 5 to 15 pairs, the lowest pair of pinnæ having the smallest number of leaflets, the two or three uppermost ones subequal; obliquely trapezoid oblong; mucronulate at apex, the uppermost pair ovate oblong, all entire, glabrous, dark coloured and shining above, lighter, and pubescent on the conspicuous midvein beneath, 5 to 8 lines long, $2\frac{1}{2}$ to $3\frac{1}{2}$ lines wide. Stipules obliquely ovate, acute, deciduous, 4 to 6 lines long. Inflorescence axillary and terminal, in subglobose heads, the central flower differing from the others, being staminate only. Calyx tubular, 5 fid, lobes erect; 2 to 3 lines long. Corolla narrowly funnel shaped, 5 lobed, 3 lines long, lobes erect, obtuse, $1\frac{1}{2}$ to 2 lines long. Stamens indefinite, united in a tube which is 7 to 9 lines long, the free portion of the filaments being about 3 lines long, filaments thread like, erect, anthers minute, dark coloured, each cell containing 2 to 4 globose masses of pollen grains; staminal tube of the central flower shorter than corolla, the free portion of the filaments only, exserted, and recurved; more numerous than in the outer flowers. Style longer than stamens, filiform, obtuse, pink. Legume shortly pedicillate, 5 to $6\frac{1}{2}$ inches long, 1 to $1\frac{1}{2}$ inches broad, obtuse at apex, prominently reticulate, papery, 5 to 10 seeded. Seeds ovate to oblong, compressed, glabrous and shining, 4 to 5 lines long, 3 to 4 lines wide; the funicle 3 to 4 lines long, thickened, and recurved at apex.

A tree from 20 to 30 feet high, with a spreading flattened top, bearing white or greenish white flowers. It is known to colonists as "Flat-crown," and to the natives as um-Hlandhloti; the wood is light, the sapwood bluish white, and of little value, the heartwood golden yellow, and is preferred by wagonmakers to all others for naves of wheels. Also used for yokes and numerous other purposes. Unfortunately the tree is very liable to attacks of white ants, so that after a tree is felled, it is often found to be hollow in the centre, and therefore useless for timber.

The central flower of the head is usually found to be filled almost to the brim with nectar, and the tree when in flower is much frequented by insects. On the West Coast of Africa, where this tree is also found, the natives prepare a sauce from the seeds by maceration. The leaves are frequently attacked by parasitic fungi, the most frequent among them being Ravenala minima, Cooke *J. M. Wood*, No. A 571; and Dothidea viventes. Cooke *J. M. Wood*, No. A 583, both of which are interesting objects for microscopical examination. In the Flora Capensis this tree is called Zygia fastigiata, E.M., but the genus Zygia, which apparently only differs from Albizzia in the length of the staminal tube, has now been united with it.

Drawn and described from specimens gathered on the Berea, October, 1896.

Fig. 1. Leaf, flower and legume, natural size; 2, Central flower; 3, Section of central flower; 4, Outer flower; 5, Corolla of outer flower laid open; 6, Stamens, all variously enlarged.

PLATE 28.

CELTIS KRAUSSIANA, Bernh.
Natural Order URTICACEÆ.

A tall handsome tree, reaching to 60 feet in height, with trunk 2 to 3 feet in diameter. Bark yellow-grey, thick, even. Leaves alternate, petiolate, exstipulate, ovate-acuminate, serrate, teeth slightly thickened; unequal at base, acuminate at apex, 3 veined at base, veins prominent beneath, and plainly visible above; glabrous on both sides, dark coloured and shining above, lighter and dull beneath, 2 to $3\frac{1}{2}$ inches long, $\frac{3}{4}$ to $2\frac{1}{2}$ inches wide; petiole 2 to 4 lines long. Flowers small, fasciculate in axils of leaves, or between the nodes, polygamous; pedicels 3 to 9 lines long. Male; perianth 4 cleft nearly to base, segments oblong, white edged, ciliate, concave, 1 to $1\frac{1}{2}$ lines long, imbricate in bud. Stamens as many as perianth lobes, and opposite to them, inserted under a small pilose disk, filaments flattened, curved upwards, as long as perianth segments, anthers 2 celled, oblong, introrse, dorsifixed. Hermaphrodite; perianth and stamens as in male; Ovary, ovoid, on a pilose disk, pilose; stigmas 2, sessile, flattened, recurved, deciduous, stigmatic surfaces densely hispid; $1\frac{1}{2}$ lines long. Fruit a small ovoid, glabrous drupe, 1 celled, 1 seeded. Seed pendulous from apex of cell.

Habitat: NATAL: In woods all over the Colony.

Drawn and described from specimens gathered on the Berea, August and September, 1896.

A handsome tree of slow growth, the wood is heavy, hard and strong, but becomes brittle when dry. It is known to colonists as "Kamdeboo Stinkhout," and to the natives as um-Vumvu. Said by Mr. Fourcade to be suitable for railway sleepers.

Fig. 1, Branches with flowers and fruit, natural size; 2, Male flower; 3, Female flower; 4, Stamens; 5, Longitudinal section of ovary; all variously enlarged.

PLATE 29.

TULBAGHIA NATALENSIS, Baker.
Natural Order LILIACEAE.

Rootstock tuberous; Leaves 5–10 to each tuber, linear, green, 6–12 inches long, channelled on face. Scape terete, 1 foot or more long. Umbel 6–10 flowered, pedicels ½ to 1 inch long, lengthening in fruit, Spathe valves 2, lanceolate, 1 inch long. Perianth pinky white, tube campanulate, 2 inches long, segments 6, in two rows, oblong or obovate, longer than the tube, Corona half as long as perianth segments, deeply lobed, yellow. Anthers 6, in 2 rows, uppper 3 near mouth of corona, lower 3 half way down the tube. Style short; stigma capitate; Capsule ovate or obovate, chartaceous, 3 lobed, 3 celled; Seeds oblong, compressed, testa loose, dark coloured.

Habitat:—Natal. Near Mooi River Railway Station, 4500 feet altitude, November. *J. M. Wood*, No. 4045; near Howick, January, Miss Stainbank.

The genus Tulbaghia includes 10 species only, of which 8 are found in South, and 2 in Tropical Africa. The present species has apparently a somewhat limited range, as it has so far as known to us only been collected in the localities named, where it prefers moist situations. The leaves have an unpleasant garlicky odour when bruised, and the whole plant is not free from it; the genus is not far removed from Allium, which includes the Onion, and the Garlic.

Fig. 1, Plant natural size; 2, Flower; 3, Section of flower; 4, Stamen; 5, Ovary, style and stigma; 6, Section of ovary, all enlarged.

PLATE 30.

BULBINE NATALENSIS, Baker.
Natural Order LILIACEAE.

A perennial herb. Leaves 6 to 15, rosulate, fleshy and full of sap, pale green, concave at base above, rounded beneath, oblong-lanceolate, 6 to 12 inches long, 2 to 4½ inches wide at base, narrowed to apex. Scapes several, issuing from axils of leaves, terete, erect, 8 to 22 inches long, ancipitous in lower portion, densely flowered upwards, naked below. Raceme 1 to 2 feet long, expanding to 1½ to 2 inches wide, bracts lanceolate-acuminate, 3 to 4 lines long, pedicels spreading, 6 to 9 lines long. Perianth segments 4 to 5 lines long, 2 to 3 lines wide, oblong, bright yellow, central vein green beneath. Stamens 6, two thirds the length of the perianth lobes, filaments yellow, bearded with long hairs of the same colour, in the upper portion only of those opposite outer segments of the perianth, nearly to the base of the three opposite the inner segments, the filaments of which are slightly broader than the others, Anthers small, oblong, dorsifixed, versatile, 2 celled. Style equalling the stamens, stigma minute. Ovary 3 celled, cells 1 or 2 ovuled. Fruit a subglobose, few seeded capsule, one or two of the cells usually abortive. Seeds compressed, black.

Habitat:—Natal. Inanda, edge of precipitous rocks, May, *J. M. Wood*, No. 553. Umlaas in similar situations, *J. M. Wood.*

This plant seems to be confined to the midland districts, and is usually found near the edges of precipices; the leaves are very succulent, and to tread upon them in such places is somewhat dangerous, as they are extremely slippery. It is known to the natives as u-Buxa. We follow Mr. Baker in the specific name of this plant,

though we see little difference between it and the description of B. latifolia, in the Flora Capensis; the latter plant, however, we have not seen. The difference given in the key to the genus, which relies on the texture of the leaves, is in our opinion not tenable, as in our specimens the leaves are certainly not thin, except in the dried state.

Fig. 1, Upper portion of leaf, with pedicel and raceme, natural size; 2, Flower; 3, Stamens, 4, Ovary, style and stigma; 5, Section of ovary; all enlarged; 6 Plant much reduced.

PLATE 31.

CHLOROCODON WHITEI, Hook.
Natural Order ASCLEPIADEAE.

A climbing half shrub, Stems twining, terete, branching, Leaves opposite, petiolate, stipulate, broadly oblong, entire, shortly acuminate at apex, rounded at base, sub-glabrous above, puberulous beneath, upper surface of midrib above, with a few small, deciduous, erect, membranous scales, mature leaves 5 to 7 inches long, 4 to 5 inches wide, petiole 1 to 1½ inches long, channelled on the the upper surface, puberulous; Stipules forming a band connecting the pair of petioles and divided into several horizontially spreading blunt teeth. Inflorescence axillary, cymose, cymes shorter than the leaves, many flowered, pedicels dichotomously branched, bracteolæ 3 to 4 lines long, Flowers dull greenish white, Calyx 5 parted, lobes ovate, shortly acute, green. Corolla 5 parted nearly to the base, lobes oblong, imbricate in bud. Corona of 5 fleshy scales, alternate with petals, each 3 lobed, lateral lobes short, oblong, obtuse; central one longer, acuminate, nearly half as long as corolla lobes. Stamens between the lobes of the corona, distinct, filaments very short and wide, overlapping the column, anthers ovate, adhering to the stigma Pollen masses linear-clavate, 2 in each anther cell. Ovary 2 lobed, style short, stigma pentagonal, depressed-conical. Follicles 2, elongate, terete, divergent, sessile, each 3–4 inches long, 1½–1¾ inch wide. Seeds comose.

Habitat: NATAL. Karkloof forest. Inanda, near Mr. Groom's farm. Zululand, Ungoya forest.

Described and figured from a specimen grown in the Botanic Gardens, Durban.

This is the "u-Mondi" of the natives, and it has a great reputation as a tonic, especially for women and children. It was at one time fairly plentiful in the coast districts, but the natives have nearly exterminated it in their eagerness to obtain the roots, which find a ready sale in the stores. The long woody roots are the only part of the plant that is used, and they are very aromatic, reminding one of ginger, but without its pungency. Some years ago it was proposed at home to utilise these roots for making a beverage akin to "Ginger Beer," but a sufficient supply could not be got, even for an experiment. The plant is usually found in dense bush, the lower portion of the stems being naked and leafless, the leaves only appearing at the tops of the supporting trees, where they frequently escape observation. It is very probable that there are two varieties of this plant in the colony. We have noticed that the roots brought from one locality are not so aromatic as is usually the case, and the colour of the flowers in the plant here described does not correspond with the description of the colour given in a late article in the "Gardeners Chronicle" nor with that in the "Genera Plantarum." Since writing the above,

the other variety has flowered in the Gardens, and the only differences that we find are that the colour of the corolla is maroon edged with yellow instead of dull greenish white, and the central lobe of the corona is a little shorter than in the variety described.

Fig. 1, Branch with leaves and flowers about natural size; 2, Flower; 3, Calyx; 4, Lobe of corona, front and side view; 5, Pollen masses; 6, Stigma, all variously enlarged; 7, Follicles, about natural size.

PLATE 32.

MILLETTIA CAFFRA, Meisn.
Natural Order LEGUMINOSAE.

A small tree 20–30 feet high, with very hard close grained wood, the heart wood is almost black, the sapwood brownish yellow. Young twigs terete or compressed, covered with brown silky hairs, older glabrescent. Leaves unequally pinnate in 5–7 pairs with an odd one; common petiole 5–6 inches long, swollen at base, channelled on upper surface, gradually tapering to apex, silky with brownish hairs; leaflets oblong, obtuse, mucronate, mucro recurved; becoming smaller below, lowest ovate, or sub-rotund, all entire, glabrous above, silky with brown hairs beneath, especially on veins; veins and primary veinlets very prominent beneath, visible above, $1\frac{1}{4}$–$2\frac{1}{2}$ inches long, $\frac{3}{4}$–1 inch wide, petioles 1–2 lines long, thickened and silky; stipellae setaceous, as long, or a little longer than petioles. Inflorescence a long cylindrical many flowered panicle, its branches compact, several flowered. Calyx silky externally, tube campanulate, limb 2 lobed, upper lobe bi-fid, lower one 3 lobed, lobes 2 lines long, obtuse. Corolla papilionaceous, standard erect, orbicular, 7–8 lines long and wide, claw short, strongly recurved, silky externally, pale lavender; wings oblong, clawed, shortly spurred at base, a little shorter than standard, and deeper in colour; keel falcate, concave, clawed, and with 2 spurs just above the claws, colour full mauve. Stamens diadelphous, the vexillary one free to base, the remainder connate for half their length, and strongly curved. Anthers small, similar. Ovary silky, style curved, stigma minute. Legume hard and woody, flat, compressed, shortly stalked and tipped with the hardened and persistent base of the style; margined, densely clothed with dark brown velvety hairs.

Habitat: NATAL: In Coast forests.

Drawn and described from specimens gathered near Durban.

This is the well known um-Zimbiti of the natives, from the wood of which the "Knobkerries" and walking sticks so frequently met with are made. The wood is hard and heavy, but the tree does not attain to a large size, it is used for spokes, etc., and according to Mr. Fourcade "has been found superior to "Lignum-vitae" for bearings of light machinery."

The bark and seeds are used medicinally by the natives, and the seeds are said to be very purgative. The leaves are sometimes covered with a black fungus on their under surfaces, which is called *Di-Orchidium Woodii*, K & C. It is, we believe, a monotypic genus, and is remarkable for its spores being in pairs, that is, two of them are borne on a short stem, or stipes.

Fig. 1, Twig with leaves and flowers; 2, Corolla opened out; a, standard, b, wings, c, keel; 3, Standard, side view; 4, Wing, side view; 5, Stamens, calyx and corolla removed; 6, Staminal tube opened out; 7, Ovary; 8, Calyx opened out; all about natural size; 9, Legume reduced.

PLATE 33.

NYMPHAEA STELLATA, Willd.
Natural Order NYMPHEACEAE.

An aquatic plant with submerged prostrate rhizome, throwing up leaves and flowers to the surface of the water. Rhizome 2 inches in diameter, black and spongy. Leaves orbicular, entire, or a little sinuate, deeply cordate at base, the lobes sometimes a little overlapping, the sinus being either at the insertion of the petiole, or a little below it, the leaf being then sub-peltate; main veins radiating from the insertion of the petiole, numerous, prominent beneath; veinlets less so; glabrous and shining above, more nor less discoloured beneath; very variable in size, reaching to 8–10 inches in diameter; petioles long or short, according to the depth of water in which the plant grows, terete, thickly clothed with transparent hairs. Flowers solitary, rising above the surface of the water. Sepals 4, inserted at base of a fleshly torus, ovato-oblong, much narrowed to apex, veins numerous, green externally, bluish white internally; $1\frac{1}{2}$–$2\frac{1}{2}$ inches long, $\frac{1}{2}$–$\frac{7}{8}$ inch wide. Petals numerous, inserted just above sepals, in several rows; linear-oblong, narrower than sepals, and equalling them in length, blue, several veined. Stamens very numerous, in many rows, on torus above the petals, the outer longest, and one half to two thirds the length of the petals; filaments flattened, short, yellow; anthers 2 celled, linear, yellow; terminating in a blue obtuse prolongation. Ovary of many carpels, concrete in the annular fleshy torus. Stigmata about 20 or more, each terminating in a blunt curved appendage. Fruit a berry, spongy, many seeded.

Habitat: NATAL: In pools all over the coast districts of colony.

Drawn and described from specimens gathered on Durban flat, February, 1898.

This is the only species of the genus known to us in the colony. We notice that in the "Index Kewensis" another species (N. capensis) is enumerated as from South Africa, but this species we do not know, and in the Flora of Tropical Africa it is said to be a synonym of N. stellata. This plant belongs to the same Natural Order as the celebrated Victoria regia, the largest aquatic plant known. Our species has so far as we know no economic value. The native name is i-Ziba. As in Limnanthemum Thunbergianum, Griesb, this species has stellate hairs in internal cells of petiole.

Fig. 1, Bud and flower, about natural size; 2, Whole plant reduced; 3, Section of flower; 4, Plan of flower; 5, Torus and stigmas; sepals and corolla removed; 6, Stamen; 7, Section of ovary; 8, Section of petiole showing internal stellate hairs; all reduced.

PLATE 34.

LIMNANTHEMUM THUNBERGIANUM, Griesb.
Natural Order GENTIANEAE.

An aquatic plant, whose leaves reach to, and float on the surface of the water. Petioles terete, glabrous, internally loosely cellular, the cells thickly clothed with stellate hairs. Leaves sub-orbicular, deeply cordate at base, edge entire, or obscurely sinuate, veins radiating from centre, immersed; dull purple beneath, texture leathery, 2–$3\frac{1}{2}$ inches in diameter. Inflorescence in several flowered fascicles springing from below the junction of the petioles with the leaves, the flowers opening in succession. Calyx gamosepalous, 5 parted, lobes acute,

glabrous, and shining. Corolla gamopetalous, 5 parted, lobes twice as long as the tube, rotate, yellow, upper surface fimbriate with cellular hair like processes. Stamens 5, on corolla tube, alternate with lobes, filaments short, flattened, anthers 2 celled, introrse. Ovary superior, 1 celled, many ovuled, surrounded by 5 glands, style short, stigmas 2, each irregularly divided. Capsule many seeded.

Habitat: NATAL: In pools all over the colony.

Drawn and described from specimens gathered near Durban, February, 1898.

This pretty little aquatic plant belongs to a genus consisting of about 23 species, principally natives of India and Australia. The one here described is the only species known to be indigenous in South Africa. As far as we know, it has no economic value, nor is it used at all by the natives, who do not appear to have any distinctive name for it, but it is very suitable for growth in ornamental waters. The stellate hairs in the cells of the petiole are a very good microscopic object, and it is somewhat difficult to understand of what value they are in the economy of the plant. It will be noticed that in drawing the artist has shown 6 petals, and 6 stamens, and in the specimens from which the figure was taken this was actually the case, as also in several other specimens gathered afterwards in the same pool, but of course the normal number is 5.

Fig. 1, Plant about natural size, but petiole much shortened; 2, Plant reduced; 3, Section of flower; 4, Corolla opened; 5, Calyx and pistil; 6, Calyx removed, showing glands; 7, Petal and stamen; 8, Stamen; 9, Section of ovary; all variously enlarged.

PLATE 35.

BUCHENROEDERA VIMINEA, Presl.
Natural Order LEGUMINOSAE.

An erect undershrub. Stems usually simple, but sometimes branched, rod like from a perennial root, terete, covered with silky white tomentum, leafy in upper two-thirds of their length, lower portion nude, 1½–3 feet in height. Leaves alternate, petiolate, exstipulate, trifoliolate, silky like the stem, petiole short, leaflets similar, lanceolate, acute, silky, 5–7 lines long including petiole, imbricating. Inflorescence in terminal leafy racemes, peduncles 1–2 flowered, shorter than leaves, bract 1, minute. Calyx gamosepalous, tube campanulate, inflated, silky, lobes 5; short, triangular; Corolla twice as long as calyx, pale lavender, with darker spot at base of standard and apex of keel; standard suborbicular, clawed, erect; wings oblong, clawed; keel sub-falcate. Stamens monadelphous; anthers similar, Ovary silky, 8–10 ovuled, style curved, stigma obtuse. Legume hirsute, a little longer than calyx, obliquely ovate, turgid.

Habitat: NATAL: Near Botha's Railway Station. Inanda, Wood No. 864.

Drawn and described from specimens gathered near Botha's, February 1898.

Buchenroedera is an exclusively South African genus, and only contains 11 species, of which we have six in Natal. The present species, which is the one most frequently met with, has a very handsome appearance from the silky covering of the stem and leaves, and delicate colouring of the flowers. We have not met with it at a lower altitude than 2000 feet above the level of the sea. It is not used in any way, nor can we ascertain its native name, even if it have one.

Fig. 1, Stem with leaves and flowers, natural size; 2, Calyx, stamens, and style, corolla removed; 3, Corolla; a, standard, b, wings, c keel; 4, Legume opened; all variously enlarged.

PLATE 36.

OLDENLANDIA MACROPHYLLA, D.C.
Natural Order RUBIACEAE.

A low growing plant with stems 1–3 feet long, ascending and rooting at nodes, branching, quite glabrous. Stem and branches terete, somewhat succulent, occasionally brown spotted. Leaves opposite, petiolate, stipulate, entire, ovate or ovato-oblong, acute, rounded at base, midvein prominent, lateral ones obscure, green and quite glabrous, 1–2½ inches long, ¾–1 inch wide; petioles very short and broad; stipules connecting the petioles, and unequally broken up in the centre into 1 or more bristle like points. Inflorescence axillary, racemose, pedicels usually in opposite pairs, sometimes solitary, or the main pedicel occasionally branched, 6–20 flowered, common peduncle much longer than the leaves; bract small, broad based, and cut at apex into 2 or several minute bristles. Calyx 5 cleft, the acuminate teeth a little longer than the tube; together 1–2 lines long. Corolla gamopetalous, 5 cleft, tube funnel shaped, lobes ovate, acute, spreading, light blue, glabrous externally, upper surface tomentose. Stamens 5, on corolla tube, exserted; anthers linear, equalling the filaments. Ovary inferior, 2 celled, many ovuled. Stigma bilobed. Capsule ovate, or turbinate, compressed, crowned by the calyx lobes, and opening at apex.

Habitat: NATAL: Coast districts, common in moist situations.

Drawn and described from specimens gathered near Durban, February 1898.

This plant appears in the Flora Capensis as Hedyotis pentamera, Hochst, but the name given above is the correct one; the two genera are very closely related, and somewhat difficult to distinguish from each other. The present plant has no known useful properties, and we cannot learn that the natives have any distinctive name for it.

Fig. 1, Portion of stem, and a branch, natural size; 2, Plan of flower; 3, Corolla opened; 4, Calyx, style and stigma; 5, Section of ovary; all variously enlarged.

PLATE 37.

WAHLENBERGIA UNDULATA, A. DC.
Natural Order CAMPANULACEAE.

Stem erect or ascending, branched, hirsute at base, gradually becoming more glabrous above, upper portion quite glabrous, 1½–3 feet high, ribbed and angular. Leaves alternate, sessile, linear-lanceolate, serrate, undulate, teeth white and thickened; lower ones pilose with white hairs, upper glabrous, 1–3½ inches long, 2–6 lines wide; peduncles elongate, dichotomously branching, bearing solitary flowers at ends of ultimate divisions, total length of peduncles in our specimens about 15 inches. Calyx gamosepalous, 5 lobed, tube ob-conical 2 lines long, lobes lanceolate, erect, a little longer than tube; glabrous. Corolla gamopetalous, campanulate, 5 lobed, lobes ovate, acute, a little recurved, twice as long as calyx, bluish white. Stamens 5, epigynous, filaments short, much dilated, and eared at base, pubescent, anthers linear-oblong, dehiscing in bud, and falling off soon after the flower opens, leaving the dilated base of the filament covering the ovary. Ovary inferior, 3 celled, many seeded, style erect, thickened, coloured, and covered with glandular hairs in upper portion, stigmas 3, at length a little recurved. Capsule 3 celled, many seeded, opening by 3 valves at apex.

Habitat: NATAL: Common.

Drawn and described from specimens gathered on Berea, January 1898.

The genus Wahlenbergia includes upwards of 80 species, of which more than half the number are natives of Tropical and South Africa. So far as is known to us they have no useful properties, though the natives use a decoction of this plant as an eye lotion. The native name of the plant is Schwaqa.

The plants from which our description was taken are growing in fairly good soil, and appear to be more luxuriant than those from which the description in the Flora Capensis was made.

Fig. 1, Plant reduced; 2, Flower; 3, Calyx, style and stigma; 4, Ovary with calyx lobes and petals removed, showing stamens; 5, Section of ovary.

PLATE 38.

IPOMOEA ALBIVENIA. Sweet.
Natural Order CONVOLVULACEAE.

A climber with large white flowers. Stems wide climbing, terete, finely pubescent, greyish. Leaves alternate, petiolate, exstipulate, broadly ovate, or sub-rotund, entire, acute at apex, cordate at base, veins very prominent, upper surface bullate; young ones having the veins and veinlets conspicuously prominent, especially beneath, and covered with dense white tomentum; lamina almost glabrous, the upper surface velvetty, and thickly covered with whitish tomentum; mature ones green and glabrous, except for a few tomentose hairs on the veins and veinlets, the fully matured ones 4–5 inches long, 6–7 inches wide, petiole 4–6 inches long, channelled on upper side, finely pubescent. Flowers on short pedicels, solitary in axils of upper leaves; Calyx 5 parted, lobes ovate from a broad base, emarginate, of thick texture, concave, the two outer ones enclosing the other three, ½ inch long; pedicel ¾ inch long; Corolla salver shaped, 5 lobed, central portion of sub-cylindrical, a little contracted at base, and gradually widening to apex; 5 plaited, plaits greenish white, margin wavy, texture of plaits thickish, of lamina delicate; 4 inches long, 3½ wide; Stamens 5, on base of corolla tube, unequal, filaments tomentose at base only, meeting in centre and almost completely closing the orifice; anthers linear-oblong, 2 celled, cordate at base, attached at sinus; Ovary on a white swollen, indistinctly lobed disk, ovate, 4 celled, 4 seeded; style long and slender, stigmas 2, globose, and again indistinctly 2 lobed. Fruit a capsule, seeds covered with silky white hairs

Habitat: NATAL: Valley of the Upper Tugela, also in Zululand.

Drawn and described from a plant in the Botanic Gardens, Durban, the seed from which it was grown having been brought from the Upper Tugela.

This is the plant which is frequently spoken of as "Wild Cotton" and it has been supposed that the cottony substance attached to the seeds might perhaps have a commercial value, but this is quite unlikely; the yield is very small as compared with that of the Cotton plant, and the labour of picking would cost more than the product would be worth. It is, however, a very ornamental plant, and the large pure white flowers are very conspicuous; the flowers are very like those of the well known *Ipomoea bona-nox*, the "Moon-flower," but this plant belongs to a different sub-genus.

Fig. 1, End of flowering branch with leaves, flowers, and buds; 2, Base of corolla tube, showing stamens; 3, Calyx, corolla removed, showing style, and stigma; all about natural size; 4, Section of ovary, enlarged.

PLATE 39.

ENTADA NATALENSIS, Benth.
Natural Order LEGUMINOSAE.

A slender, prickly, climbing shrub. Branches usually 5 angled, the angles bearing sharp recurved prickles, glabrous, young ones tomentulose. Leaves abruptly bi-pinnate, 4–8 jugate, stipulate, common petiole 2–6 inches long, swollen at base, and with a dark coloured discoid or conical gland just above the swelling, prickly for the whole of its length, terminating in a hair-like mucro; pinnae opposite, 12–15 jugate, leaflets opposite, oblong, often a little unequal at base, glabrous, paler beneath, very shortly petiolulate, 4–5 lines long, 2–3 lines wide; secondary petioles swollen at base, angular, without prickles. Inflorescence in axillary and terminal spikes, 1–4 together in axils of leaves. Spikes many flowered, 1–2 inches long; peduncles $\frac{1}{2}$–$\frac{3}{4}$ inch long. Calyx small, cup shaped, indistinctly lobed. Corolla gamopetalous, 5 lobed for $\frac{1}{3}$ the way down, lobes acute, light green, $1\frac{1}{2}$ lines long. Stamens 10, free, much exserted, anthers dorsifixed, bearing a large globose, stalked, deciduous, white gland at apex, pollen granular, Ovary stipitate, pubescent; Style long, slender; stigma minute; Legume compressed, thin, margined, veiny, 4–6 inches long, $\frac{3}{4}$–1 inch broad, ultimately breaking into 10–12 1-seeded indehiscent portions. Seeds attached by a long cord.

Habitat: NATAL: Coast districts, reaching to at least 2–3000 feet above sea-level.

Drawn and described from specimens gathered on Berea, January, 1898.

This genus includes 10 species, of which 6 are African, 3 Tropical American, and one widely spread in Tropical countries; the latter, *E. scandens*, is well known by its large seeds, which are often found cast up by the sea on our shores; it has been reported as being a native of Natal, though we have not met with it; it has, however, been found on the East coast, and is probably widely spread in Central Africa. Its pod reaches 4 feet in length, and is 3–4 inches broad; a specimen of it is in the Durban Museum; it is the "Sword bean" of the East and West Indies. In the description of the genus in the Flora Capensis the petals are said to be free, or nearly so, but we find them to be exactly as described here, and figured in the illustration. The plant is known to the natives as u-Bobo, but we cannot learn that they put it to any use.

Fig. 1, Portion of branch with leaves and flowers about natural size; 2, A flower; 3, Corolla opened; 4, A stamen with its gland; 5, Gland; 6, Ovary and style; 7, Legume. All but 7 variously enlarged, 5 very much so.

PLATE 40.

GARDENIA THUNBERGIA, L f.
Natural Order RUBIACEÆ.

A small, unarmed, much branched tree. Trunk 6–9 inches diameter, 6–12 feet high; bark grey, smooth. Leaves opposite, petiolate, stipulate, elliptic, or broadly ovate, entire, a little undulate, acuminate at apex, gradually tapering at

base to a winged petiole, quite glabrous and shining on both surfaces, and with pits clothed with hairs in angles of veins beneath, which appear as rounded elevations on the upper surface; 3–6 inches long including petiole, 1½–4 inches wide. Flowers terminal, solitary, sessile. Calyx tubular, split part way down on one side, tube from base of ovary to base of lobe 1–1½ inches long, lobes differing in number on same plant, from 1–7 or more, spathulate, inserted a little below the edge of calyx tube, and slightly decurrent on it, 3–5 lines long; Corolla salver shaped, tube cylindrical, 1½–3 inches long, a little widening at throat, lobes varying in number, usually 8, but sometimes 9, or 10, ovate, overlapping to the left. Stamens 8–10 inserted at throat of corolla, sessile; anthers linear, 9 lines long, the upper half exserted. Ovary inferior, style cylindrical, stigma obtusely 5 lobed, closing the throat of corolla. Fruit a greyish white, ovate, indehiscent, minutely pitted, woody berry, 2½–4 inches long, 1½–2 inches wide, imperfectly 5 celled, many seeded, seeds compressed, ovate to oblong, 3 lines long, 2 lines wide, imbedded in dryish pulp.

Habitat: NATAL: Coast districts.

Drawn and described from specimens gathered on Berea, February, 1898.

A small tree, said by Mr. Fourcade to reach 20 feet in height, but we have never found it more than stated in the description. The wood is "hard, strong and tough, used for making tools, clubs, kerries, yokes, axles, felloes, ploughs, etc., and also fit to engrave upon." The flowers are large, handsome, and powerfully scented, remaining open the whole day, and the attachment of the spathulate calyx lobes is worthy of notice. The fruit remains upon the plant a year or more before becoming fully ripe. The tree is known to the natives as um-Valasangwaan, its poles having been used to close the entrance of their cattle kraals. It is also a native of Mozambique, Central Africa, Nile land, and Upper and Lower Guinea.

Fig. 1, Twig with leaves, flower and fruit, slightly reduced; 2, Calyx, style and stigma; 3, Throat of corolla, showing attachment of stamens; 4, Stigma, upper surface; 5, Section of ovary.

PLATE 41.

ALOE COOPERI, Baker.
Natural Order LILIACEÆ.

A short stemmed plant, sometimes solitary, but more commonly two or more stems in a clump. Leaves on each stem 8–15, distichous, much dilated at base, and gradually tapering to apex, which is usually more or less withered; deeply channelled, thickly spotted for one third of its length from base, with linear-oblong white markings, which are acute at each end; dull green, obscurely striped, margin narrow, horny, with small deltoid, or curved teeth, which reach ¾ of the way from base and become gradually smaller upwards, the upper ¼ being without teeth; 1 foot to 3 feet 6 inches long, 1–2¼ inches wide at base. Peduncles simple, terete, 1–2½ feet long, with 15–20 ovate-cuspidate, empty bracts, which reach half way down the peduncle, and at least when young are closely adnate to it. Flowers numerous, in a dense corymbose raceme; lower pedicels 1–2 inches long, fertile bracts oblong-lanceolate, almost completely clasping the peduncle, 5–10 veined, green, ¾–1 inch long. Perianth cylindrical, 1¼–1½ inches long, reddish yellow, and a little swollen at base, green in upper portion, tube very short, segments linear-oblong, a little tapering to apex, obtuse, several veined, concave. Stamens 6,

included, filaments linear, white; anthers 2 celled, introrse, linear-oblong, dorsi-fixed. Ovary sessile, 6 lined, 3 celled, cells many ovuled, ovules attached in two rows in each cell, superposed, style just exserted, stigma obtuse. Fruit an oblong many seeded capsule $1\frac{1}{2}$ inches long.

Habitat: NATAL: Midland and Upper districts.

Drawn and described from a specimen grown in the Botanic Gardens, Durban, which was brought from Zululand.

This plant is not commonly found in the coast districts, but is plentiful in the higher parts of the Colony. It is known to the natives as isi-Putumana, and its flowers are boiled and used as a vegetable, and when properly cooked, they are not to be despised.

Fig. 1, Plant reduced; 2, Apex of peduncle with flowers, reduced; 3, Leaf, reduced; 4, Flower; 5, Corolla opened; 6, Stamen; 7, Ovary and style; 8, Section of ovary, all enlarged.

PLATE 42.

GREWIA CAFFRA, Meisn.
Natural Order TILIACEÆ.

A rambling shrub. Stems somewhat quadrangular, occasionally cruciform, bark light brown, glabrous. Leaves alternate, petiolate, stipulate, narrowly ovate to ovate-oblong, finely and sharply serrulate, mucronulate, glabrous, dark green on both sides, $1\frac{1}{2}$–$2\frac{1}{4}$ inches long, 4 lines to 1 inch wide; petiole 2 lines long, curved; stipules equalling petiole, linear, brown, deciduous, membranous. Inflorescence axillary, solitary, or in few flowered cymules, peduncles about $\frac{1}{2}$ inch long, lengthening in fruit, pedicels 3–4 lines long, bracteate at base, buds linear-oblong, swollen at base. Sepals 5, free, linear-oblong, 4–5 lines long, recurved, yellow on inner surface. Petals 5, free, shorter than sepals, linear-oblong, clawed, the claw thickened and spoon shaped, forming a nectariferous gland; inserted at the base of columnar torus which supports the stamens and ovary. Stamens numerous, inserted at summit of the torus, filaments filiform, yellow; anthers 2 celled, small, roundish. Ovary superior, many seeded. Drupe depressed globose, or unequal sided, smooth, containing 1–4 nuts.

Habitat: NATAL: Coast to Drakensberg.

Drawn and described from specimens gathered near Durban, February, 1898.

The genus Grewia contains about 60 species, natives of the warmer parts of the world, of these, 7 are natives of Natal, and about 30 others of Tropical and South Africa. None of the species have any economic value as far as known to us, but the curious ribbed or cruciform stems of the present species are frequently made into walking sticks, one at of least which is in the Museum at Kew. It is known to the natives as i-Klolo, by which name *G. occidentalis* is also known, they not being able to distinguish between the two species.

Fig. 1, Twig with flowers and fruit, reduced; 2, Flower; 3, Petal; 4, Section of ovary; 5, Section of flower, all enlarged; 6, Section of stem, reduced.

PLATE 43.

MIMUSOPS CAFFRA, E. Meyer.
Natural Order SAPOTACEÆ.

A tree reaching 20 to 25 feet in height, with trunk 2 feet in diameter, which is seldom straight. Twigs terete, green, finely pubescent. Leaves scattered, petiolate, exstipulate, coriaceous, obovate, entire, emarginate, edge recurved, tapering to the short petiole, 1½–2 inches wide, dark green and glabrous above, finely silvery pubescent beneath, petioles 2–5 lines long. Flowers clustered in axils of leaves, 2 or several together, peduncles simple, ¾–1 inch long. Calyx 8 parted, the lobes in two series, lanceolate, widely spreading, the outer finely and densely pubescent, light brown, the inner row very minutely pubescent, dull white, channelled beneath. Corolla lobes 24, in two rows, the outer row of 16; 2 being opposite each calyx lobe, and spreading; the inner row of 8, one being opposite each calyx lobe and erect; all lanceolate, white. Stamens 8, on corolla tube, filaments shorter than anthers; anthers extrorse; alternating and connate at base with 8 barren ones (Staminodes), which are ovate, acute, and clothed with long hairs. Ovary superior, 6–8 celled, hairy. Fruit a drupe, ¾ inch long, ½ inch wide, red when ripe, each containing 1 seed, the remainder being abortive; seeds oval, sub-compressed, dark brown, shining, ½ inch long.

Habitat: NATAL: Near the sea coast.

Drawn and described from specimens gathered near Durban, January 1898.

This is the tree known to colonists as the "Red Milkwood," and to natives as um-Nweba. The wood is hard and heavy, used by shipbuilders for knees, etc., as it is durable in water. It is also used by wagon builders, but it is liable to be attacked by insects if felled in the summer months. The fruit is eaten by natives and children, but is not very palatable.

Fig. 1, Branch with leaves and flowers, natural size; 2, a Flower; 3, Section of flower; 4, Stamens and staminodes; 5, Fruit; 6, Section of ovary.

PLATE 44.

HELINUS OVATA, E. Meyer.
Natural Order RHAMNEÆ.

A wide climbing shrub. Branches and branchlets divaricate, slender, ribbed, young ones pubescent, reddish brown, tendrils spirally twisting. Leaves alternate, petiolate, stipulate, sub-orbicular or ovate, quite entire, retuse, mucronulate, sub-glabrous above, pubescent beneath, 1½–2 inches long, 1¼–1¾ wide, petiole ½–1 inch long, stipules linear, deciduous. Inflorescence axillary, in few flowered cymes. Peduncle ½–¾ inch long, pedicels 4 lines long. Calyx gamosepalous, tube obconic, limb 5 lobed, lobes deltoid, spreading, equalling tube, green. Petals 5, alternate with calyx lobes, convolute, equalling calyx lobes, yellow. Stamens 5, opposite petals, and inserted with them at summit of calyx tube, filaments yellow-green, red brown at base, flattened and narrowing to apex, anthers small, 2 celled, dorsi-fixed, erect. Disk thick, closing mouth of calyx tube, yellow, with perforation in centre through which the style is protruded. Ovary 3 celled, 2 seeded, style short stigma 3 fid. Fruit globose, areolate at summit, 3 seeded, seeds convex, trigonous, shining.

Habitat: NATAL: Edges of woods and thickets all over the colony.

Not used in any way as far as we are aware. Native name u-Bubupu.

Fig. 1, Twig with leaves and flowers, reduced; 2, Flower, front view; 3, Section of flower; 4, Fruit; 5, Section of fruit; all enlarged.

PLATE 45.

CLERODENDRON GLABRUM, E. Meyer.
Natural Order VERBENACEÆ.

A small tree. Bark yellow-brown, thin. Leaves in whorls of 3, petiolate, exstipulate, ovate, or oblongo-lanceolate, acuminate at apex, and gradually tapering to a channelled petiole, edge entire, revolute, undulate, glabrous, dark green, dull, not shining, 2–5 inches long, 1¼–2 inches wide; petiole ½–1 inch long, pubescent on the channelled upper portion. Inflorescence terminal, in many flowered cymes. Calyx gamosepalous, tube campanulate, limb 5 cleft, lobes lanceolate, spreading. Corolla salver shaped, white, tube cylindrical, 4 lines long, three times longer than calyx, lobes oblong, about half as long as tube. Stamens 4, much exserted, filaments pink, anthers brown, 2 celled, dorsally affixed. Ovary normally 4 celled, cells 1 ovuled; style much exserted, stigma 2 fid, lobes acute. Fruit a drupe, seated in the persistent calyx, 1 or more seeded, sub-globose, 4 lines in diameter, yellow when ripe.

Habitat: NATAL: From coast to Drakensberg.

Drawn and described from specimens gathered near Durban, January 1898.

A small tree, the wood of which is little if at all used. It is a conspicuous object when in flower, but the flowers, which are borne in great profusion, are rather unpleasantly scented. It is known to the natives as um-Quaquane, or um-Quoqongo, and some part of the tree is used as a purgative for calves. Mr. Fourcade in his report on Natal Forests gives Dr. Sonder as the author of the species, having no doubt followed Harvey in the Genera of South African plants; the Index Kewensis, however, attributes it to E. Meyer, and this is no doubt correct.

Fig. 1, Twig with flower, natural size; 2, Flower; 3, Flower, opened; 4, Ovary and style; 5, Young fruit; 6, Section of ovary; all enlarged.

PLATE 46.

VANGUERIA LASIANTHA, Sond.
Natural Order RUBIACEÆ.

A small shrub. Twigs terete, glabrous. Leaves opposite, petiolate, stipulate, oblong to ovate-oblong, obtuse at both ends, edge entire, a little recurved, veins conspicuous, dark green, glabrous and glossy above, paler and dull beneath, with a few hairs on midrib, 2½–4 inches long, 1–1¾ inches wide, petiole ¼ inch long; pubescent; stipules cuspidate from a broad base, 2–3 lines long, deciduous. Inflorescence axillary, cymose, the branches usually divaricate, 6–13 flowered, central flower usually solitary, lateral branches generally 3 flowered. Calyx, tube campanulate, short, lobes 5, ob-lanceolate, or spathulate, 3 times longer than the tube, at length reflexed, yellow-green, pubescent; persistent on young fruit, but falling away before fruit matures. Corolla, 5 lobed, tube barrel shaped, lobes lanceolate from a broad base, strongly reflexed, twice as long as tube, with a circle of reflexed white hairs half way down, (about half as long as anthers); anthers 2 celled, acute. Style slender. Stigma cylindrical, intruse at base, obscurely 5 lobed at apex. Ovary 4–5 celled, cells 1 seeded. Fruit a berry, normally 5 seeded, but sometimes fewer by abortion, crowned with a conspicuous areole at apex.

Habitat: NATAL: Coast districts.

Drawn and described from specimens gathered on Berea, December 1897.

This is a small shrub sometimes reaching 10 feet in height; the flowers are numerous and yellow, and are sometimes remarkable by the manner in which the corolla lobes are reflexed as shown in the drawing. The berry is globose, 1–2 inches in diameter, and is eaten by the natives, who appear only to know it as the bush um-Vilo, um-Vilo being the name of *Vangueria infausta*, known to colonists as the "Wild Medlar." The genus Vangueria has in Natal 7 or 8 representatives, two of which are small plants not reaching more than 4–5 inches in height, but bearing a berry fully as large as the one here described; these two plants are both recent discoveries, and neither of them appear in the Flora Capensis. None of these species have any commercial value, but the fruits of several, if not all of them, are eaten, and might probably be improved by cultivation.

Fig. 1, Twig with leaves and flowers, natural size; 2, Flower; 3, Flower, corolla removed, showing style and stigma; 4, Corolla opened; 5, Section of ovary; all enlarged.

PLATE 47.

ZIZYPHUS MUCRONATA, Willd.
Natural Order RHAMNAE.

A tree, 20–30 feet high. Trunk 12–18 inches in diameter, bark reddish brown, thin, twigs brown, frequently rough with lenticels, young ones green, also lenticular, and sometimes finely pubescent, prickles single or in pairs, and recurved, often present on the young twigs. Leaves alternate, petiolate, stipulate, ovate, tapering to apex, unequal and 3 veined at base, obtuse, mucronulate, finely crenate, glabrous, $1\frac{1}{4}$–$3\frac{1}{2}$ inches long, 1–$2\frac{1}{4}$ inches wide, petiole $\frac{1}{2}$–$\frac{3}{4}$ inch long, stipules minute, subulate, dark brown, deciduous. Inflorescence in axillary many flowered cymes, equalling the petiole. Calyx 5 lobed, lobes acute, reflexed. Disk fleshy, closing mouth of calyx tube, obtusely 5 angled, pitted. Corolla of 5, small, concave, sub-rotund, clawed petals, inserted on throat of calyx at angles of disk, and reflexed. Stamens 5, opposite to the petals, and lying within their concave blade. Ovary sunk in the disk. Styles 2, short, divergent. Drupe globose, red brown and shining, 2 seeded.

Habitat: NATAL: Coast and Midlands, common.

Drawn and described from specimens gathered on Berea, December 1897.

A small tree known to the natives as um-Pafa, the wood is used in wagon work, and the root is glutinous, and according to Dr. Smith, "a decoction of it is used internally for all scrofulous diseases, and for swollen glands of the neck. A paste of the leaves is also applied to glandular swellings." We cannot learn that any part of the tree is used medicinally by Natal colonists.

Fig. 1, Twig with leaves and flowers, reduced in size; 2, Flower seen from above; 3, Section of flower; 4, Calyx seen from beneath; all variously enlarged.

PLATE 48.

COLEOTRYPE NATALENSIS, C. B. Clarke.
Natural Order COMMELINACEÆ.

A herbaceous plant with pale blue flowers. Stems decumbent, and rooting below at nodes, terete, green, fleshy, glabrous and shining. Leaves alternate, sheathing the stem at their base, the blade broadly lanceolate-acuminate, entire, glabrous, veins obscure, tapering and channelled at base, 3–6 inches long, ¾–1¼ wide in central portion, with a few pilose hairs at base, the sheath completely clasping the stem for 6–9 lines, and pilose with long white hairs at its upper edge, pubescent on outer surface Inflorescence of a few flowers at nodes, which at maturity burst through the base of the sheath and open in succession, surrounded with several leafy bracts. Sepals 3, distinct, linear, green in upper half, with a few hairs on midvein; 7–9 lines long. Corolla tube slender, cylindrical, 9 lines long, lobes 3, sub-orbicular, spreading, 9 lines long, 6–7 lines wide, pale blue stamens 6, all perfect, on corolla at throat, and about one-third as long as its lobes, flaments clothed with long jointed hairs, anthers 2 celled, ovoid, equal, cells parallel. Ovary sessile at base of corolla tube, pilose with long white hairs, 3 celled, cells 1–2 ovuled, ovules superposed. Style longer than stamens. Stigma cup-shaped. Fruit a capsule.

Habitat: NATAL: Coast districts, reaching to 2000 feet above the sea level.

Drawn and described from plants gathered on Berea, December, 1897.

This genus includes 3 species only, the other two being natives of Madagascar. In the Order to which it belongs the genus is remarkable for the manner in which it produces its flowers, the inflorescence being forced through the base of the sheath, and not issuing from the mouth of a spathaceous bract as in the allied genera *Commelina*, and *Cyanotis*, the only two Natal genera which have this sheath like bract, hence the generic name of the present species, which means "sheath borer." The bead-like hairs on the filaments are also present in some of the other genera, notably so in *Cyanotis*, which is so common all over the colony, and under a microscope with careful manipulation, the rotation of the sap may be observed in them.

Fig. 1, Plant, natural size; 2, Sepal, front view; 3, Stamens; 4, Section of ovary; 5, Jointed hair on filaments; 6, Flower, showing tube of corolla; all variously magnified.

PLATE 49.

SOLANUM DUPLO-SINUATUM, Klotzsch.
Natural Order SOLANACEAE.

An erect herbaceous plant, usually 1–2 feet high, but sometimes in shady places and with support of the undershrubs reaching 4 feet in height. Stems terete, green, thickly clothed with stellate hairs, and with a few scattered spines. Leaves with 5–6 lobes on each side, the 3 central ones largest, interspaces wide, the edges sinuate, or lobed, 1–3 lobes on each side, varying much in depth, the apices acute, midvein and lateral veins armed with spines both above and beneath, spines 3–5 lines long; more or less covered with purple stellate hairs; lamina above hirsute, young ones densely so, the hairs springing from a swollen base; beneath densely stellato-pubescent, with white hairs; 5–15 inches long, 4–12

inches wide in centre; petiole ½–¾ inch long, stellate and spiny like the veins. Inflorescence corymbose, corymbs few flowered, peduncles, pedicels and calyx thickly covered with purple stellate hairs. Calyx 5 parted, lobes lanceolate, spreading, with many erect spines, lobes enlarging in fruit, tube very short. Corolla rotate, scarcely lobed, segments acute, externally stellate pubescent, inner surface glabrous, stamens 5, anthers erect, sub-sessile, opening by pores at apex. Ovary glabrous; style longer or shorter than stamens; stigma capitate, green. Fruit a many seeded berry, enclosed in the persistent and enlarged calyx, the lobes of which become 1½–2 inches long, overtopping the fruit, and 5–6 lines wide at base, and are externally beset with numerous spines; berry globose, white in upper third, green at base, and with many green branching lines reaching from base nearly to apex.

Habitat: NATAL: Berea, Wood, No. 5408.

Drawn and described from specimens gathered on Berea, December, 1897.

The genus Solanum includes about 900 or more species, and though 8 only are enumerated in Mr. Medley Wood's "Preliminary Catalogue," three more have been added to the list since its publication, and it is quite likely that several more will be added when the genus receives more attention. The present species was first described from Mozambique, and was only recognized as a Natal plant 3 or 4 years ago. It is not uncommon about the Berea at edges of bush, and in slight shade, but does not appear to extend far inland; its flowers are handsome, and perhaps larger than those of any other Natal species. The berries, as also those of *S. Thruppii*, have been used as a remedy for ringworm, and it is said with some success. We cannot learn that the natives have any distinctive name for it, the whole of the larger Solanums being called by the same name, um-Tuma.

Fig. 1, Leaf and flower reduced; 2, Calyx; 3, Fruit; 4, Stellate hair; 5, Spine

PLATE 50.

JASMINIUM STREPTOPUS, E. M.
Natural Order OLEACEAE.

A climbing shrub. Stems woody, slender, terete, glabrous, brownish, branching; twigs green, slender, pubescent. Leaves opposite, simple, exstipulate; petiolate, ovate, oblong, or ovato-lanceolate, quite entire, sub-mucronate at apex, pubescent above, with foxy hairs on midrib, and conspicuous tufts of similar hairs on angles of veins beneath, 1–3 inches long, ½–1½ wide, petiole thickened and curved, 1–2 inches long. Flowers axillary and terminal. solitary or cymose; peduncle ½–3 inches long, 2–5 flowered; pedicels 6–8 lines long. Calyx tubular, 5 toothed, teeth short and thickened, or longer and acute. Corolla salver shaped, white, tube 1–1¼ inches long, limb 5–9 lobed, lobes linear-lanceolate, spreading, imbricate in bud, shorter than tube. Stamens 2, on tube, included, filaments short, anthers linear-oblong, mucronate, 2 celled, introrse. Style 1, rather abruptly thickened in the upper half; Stigmas 2, linear, very finely pubescent. Ovary 2 celled, cells 1 seeded. Fruit a capsule.

Habitat: NATAL: From the coast to at least 2000 feet above the sea level, common.

Drawn and described from specimens gathered on the Berea, December, 1897.

The genus Jasminium includes about 100 species. natives of Asia, Africa, and Australia, one species only, being indigenous in Southern Europe. The flowers are usually white, but occasionally yellow, and the white flowered species sometimes have the exterior portion of the corrolla more or less deeply tinted with red. Many species are in cultivation, and are esteemed for their beauty, and also for the scent of their flowers. In Natal we have at least 3 indigenous species, 2 of which are not uncommon in the coast districts, while the other one is found in the higher parts of the colony, reaching to the Drakensberg at 6000 feet above sea level. We have in the Government Herbarium one species labelled *J. Gerrardi*, but this name does not appear Index Kewensis, and the specimen is too incomplete for certain identification, the locality where it was gathered is not given, but it is apparently one of Mr. Gerrard's own collecting.

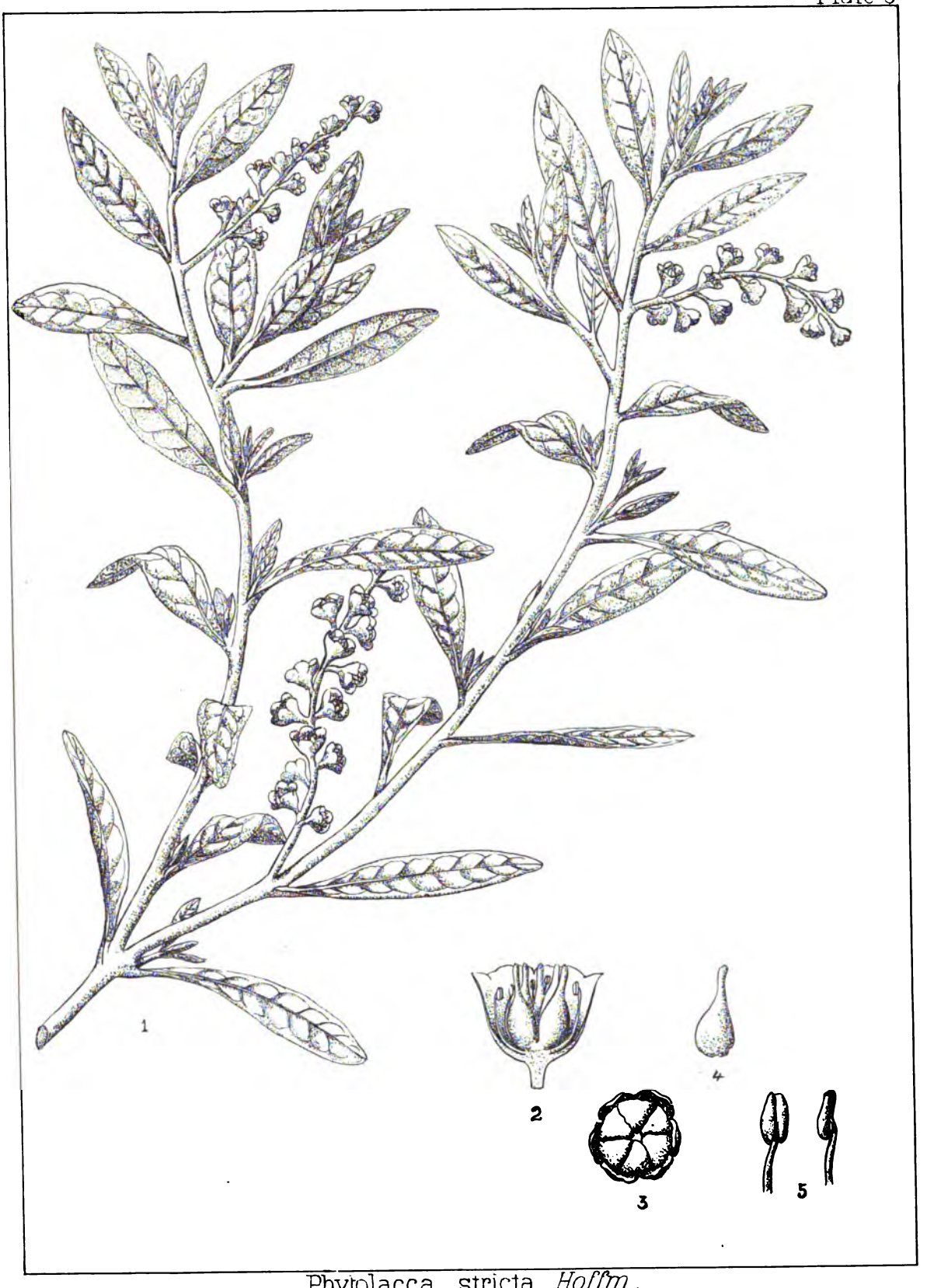
The present plant is dimorphic; and the two forms, are on different plants; in one the style is long, and exserted; in the other it is short, and does not reach to the level of the anthers, the stamens occupying the same position in both forms, the anthers in both forms contain pollen.

Fig. 1, Portion of stem with branch, leaves and flowers, natural size; 2, Section of flowers, long styled form; 3, Section of flower, short styled form; 4, a Bud; 5, a Stamen; 6. Style.

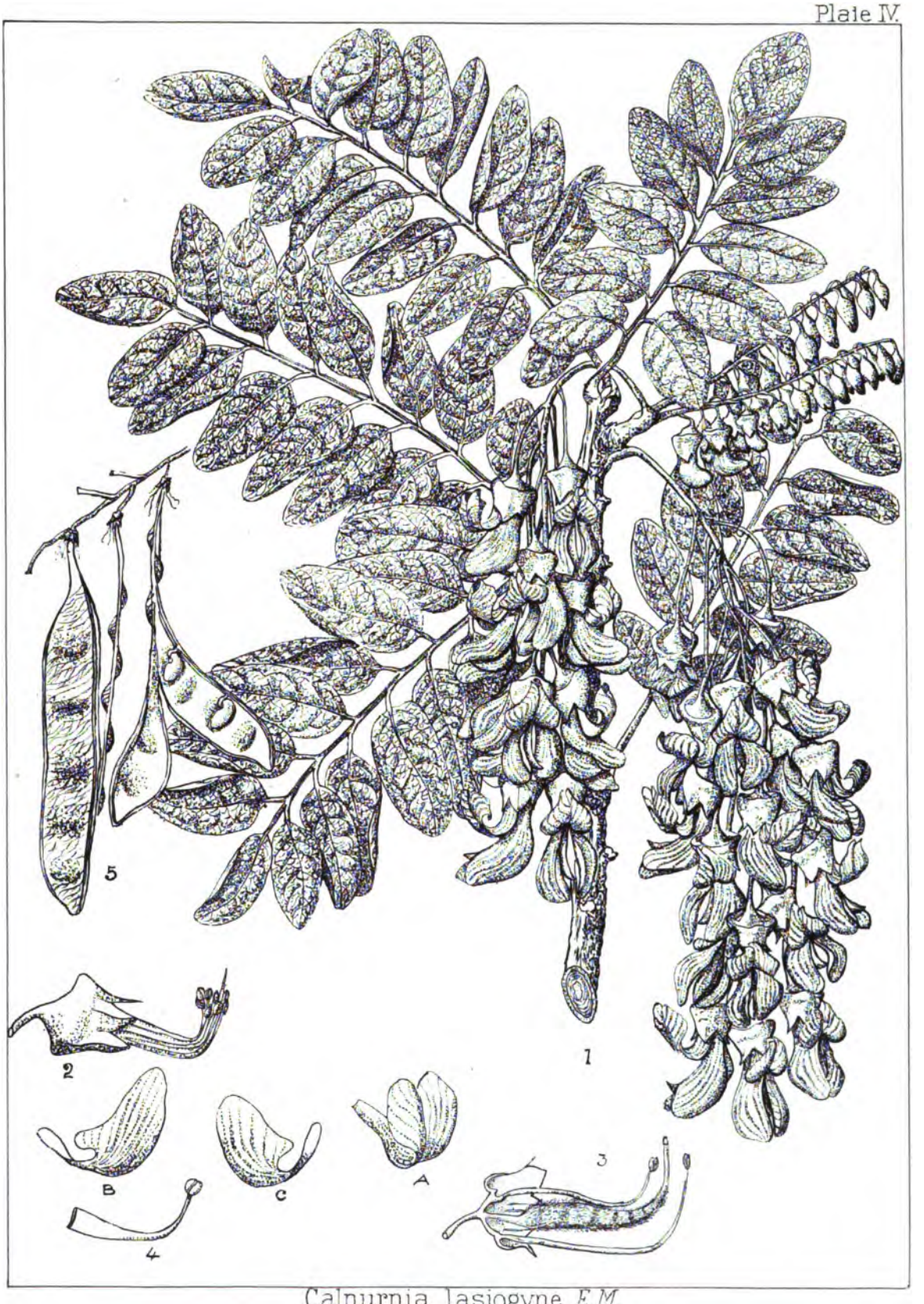
NOTE.—In figure 2 and 3 the filaments are shown too long.

Moschosma riparia, *Hochst.* δ

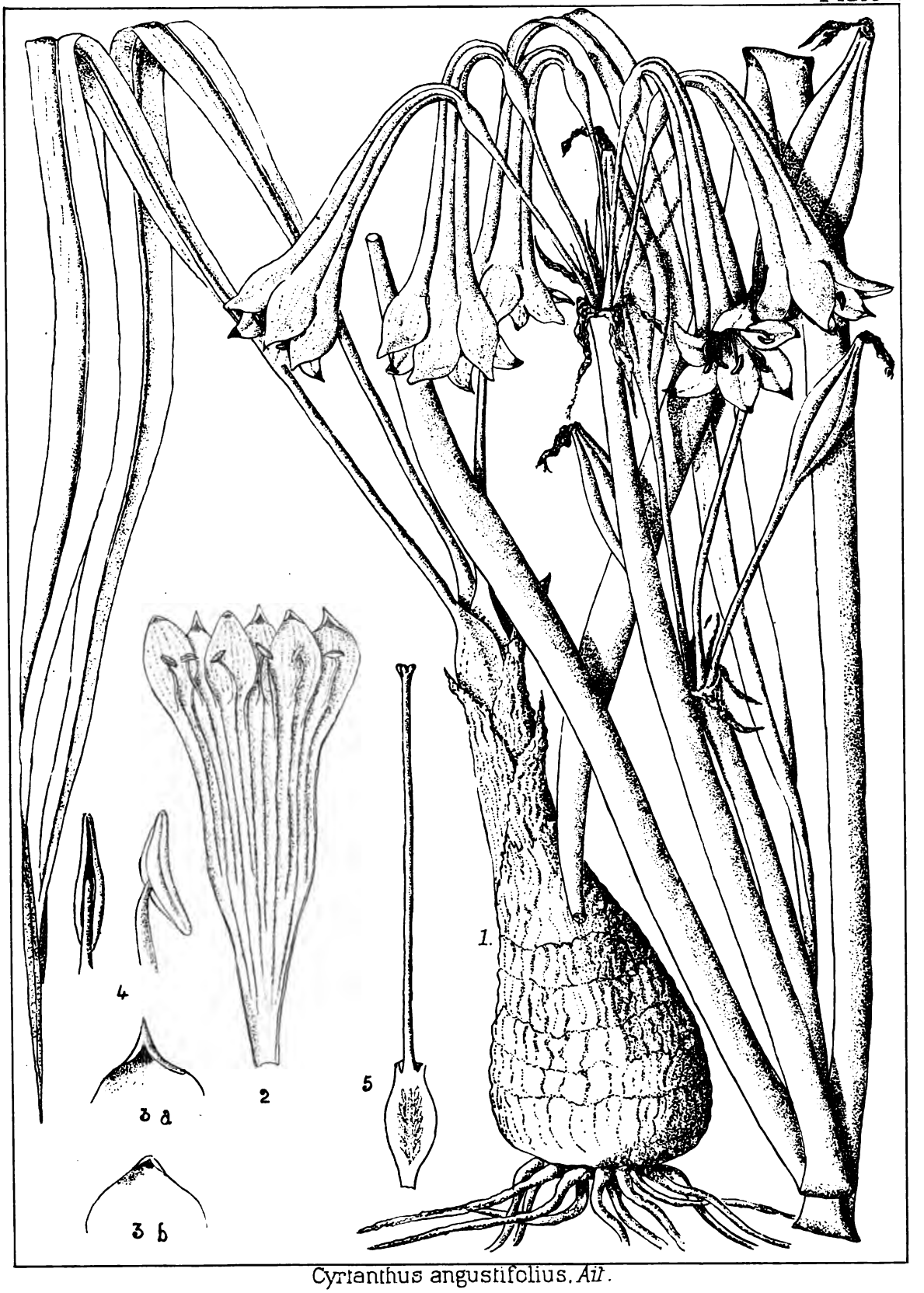
Moschosma riparia, *Hochst.*



Phytolacca stricta, *Hoffm.*



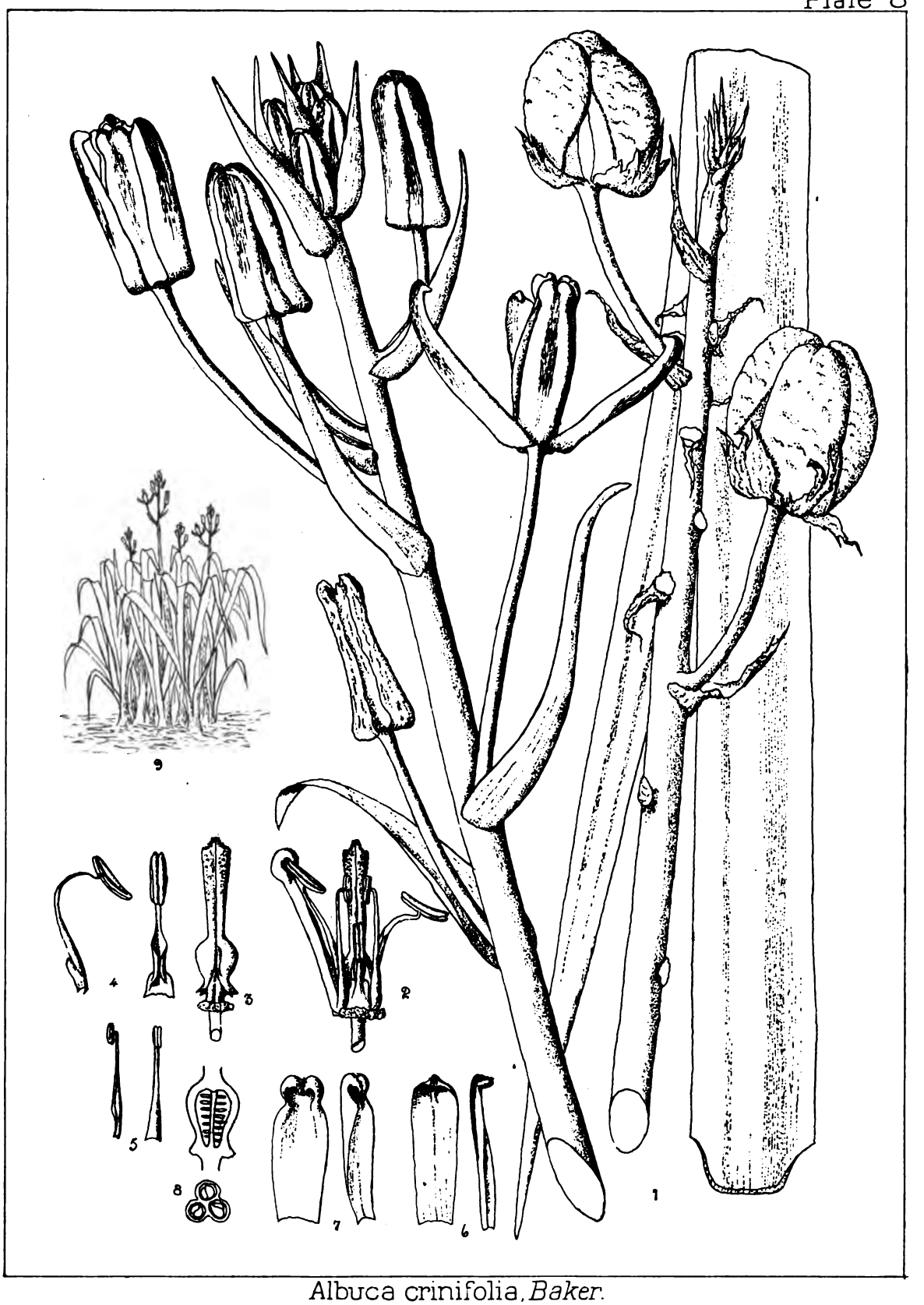
Calpurnia lasiogyne, *E.M.*



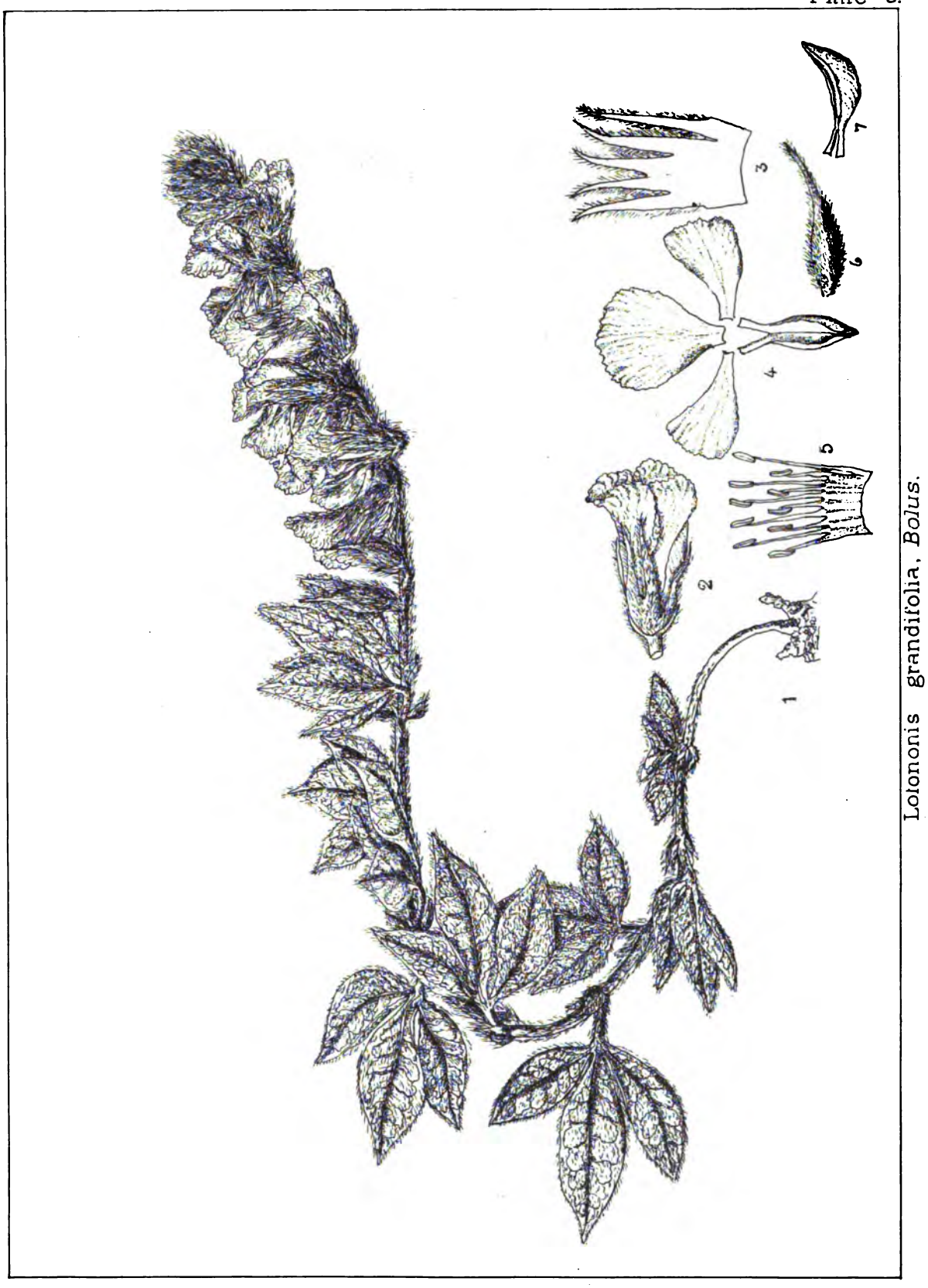
Cyrtanthus angustifolius. *Ait.*

Ekebergia Meyeri, *Presl.*

Crassula umbraticola, *N.E.Brown.*

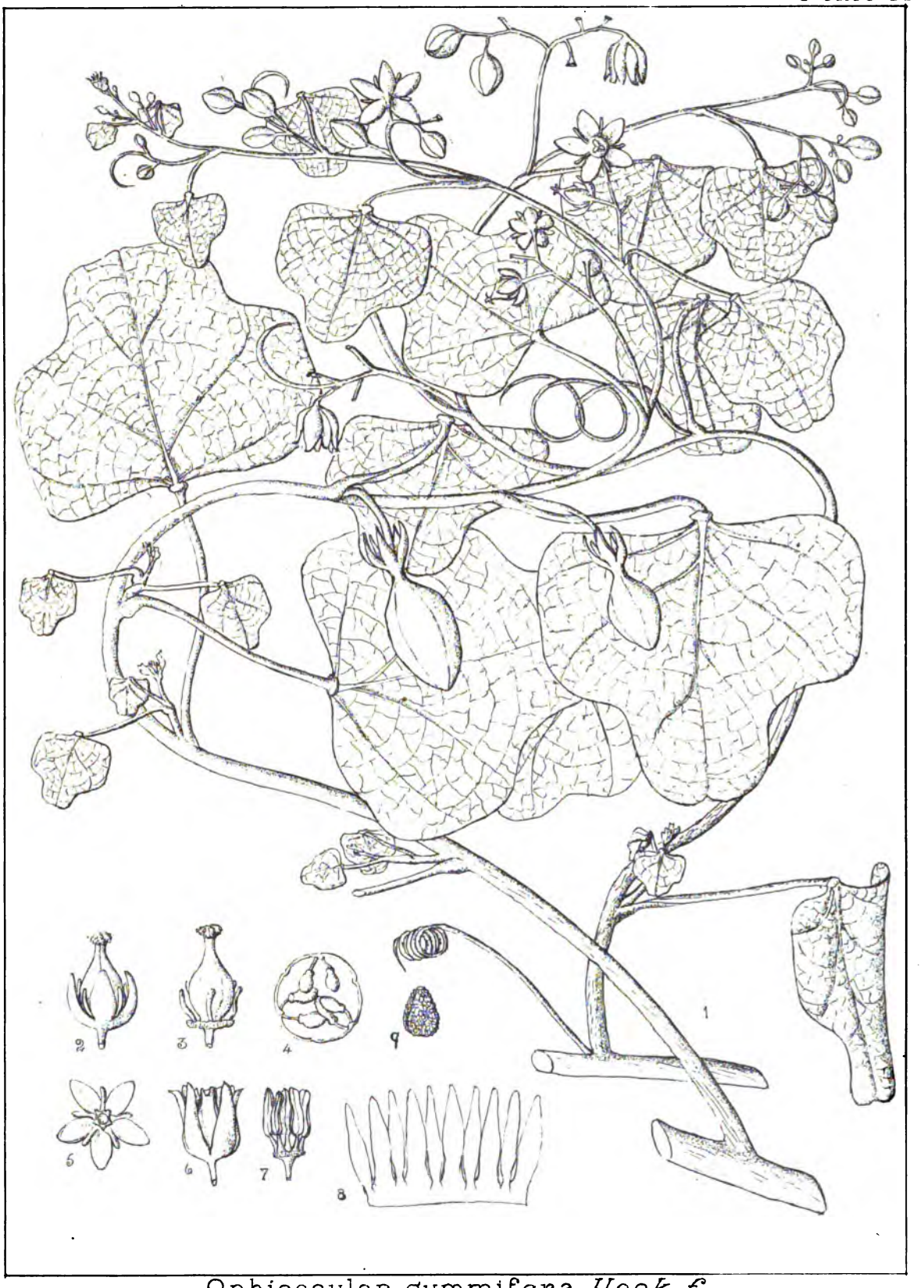


Albuca crinifolia, *Baker.*

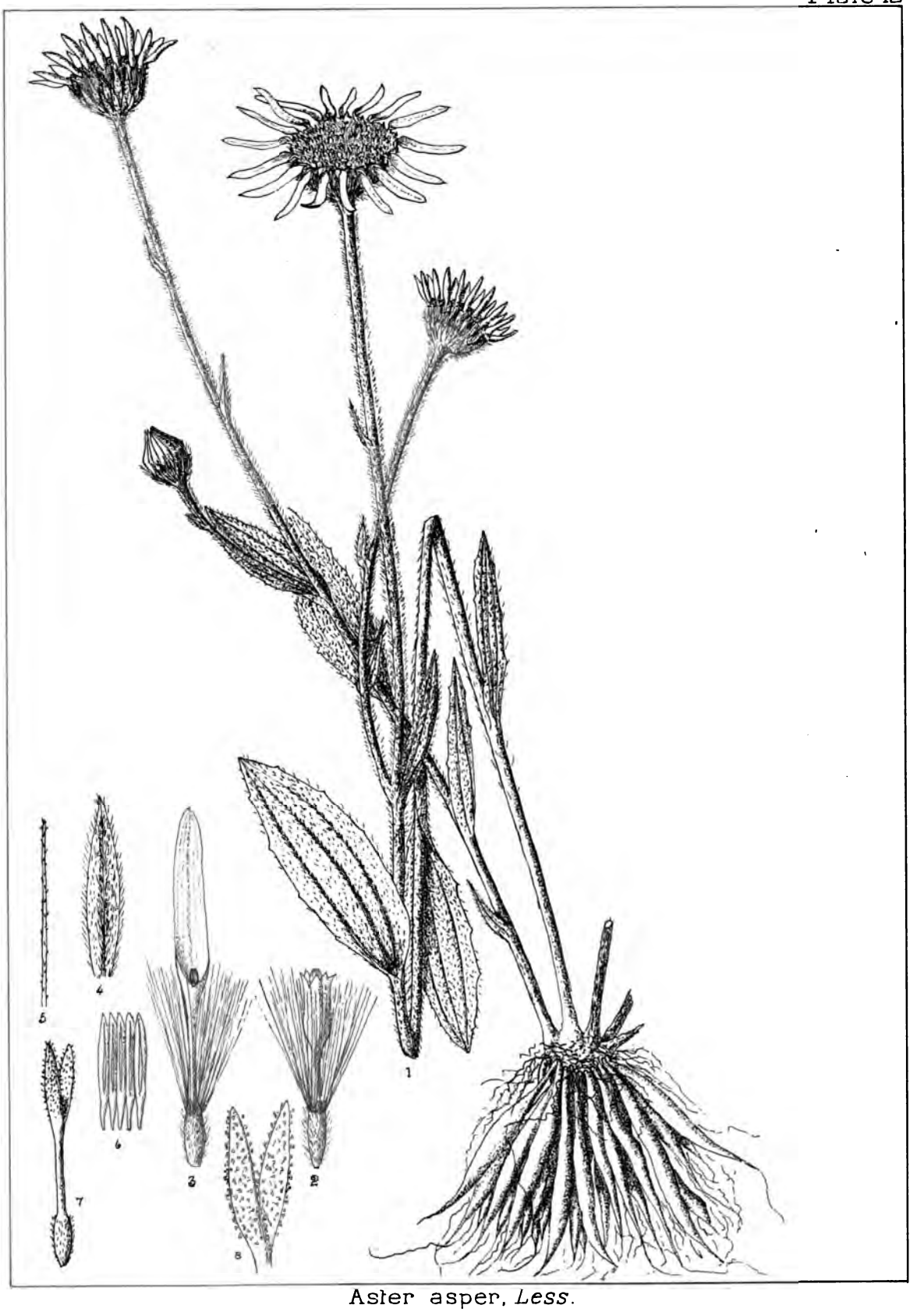


Lolononis grandifolia, *Bolus.*

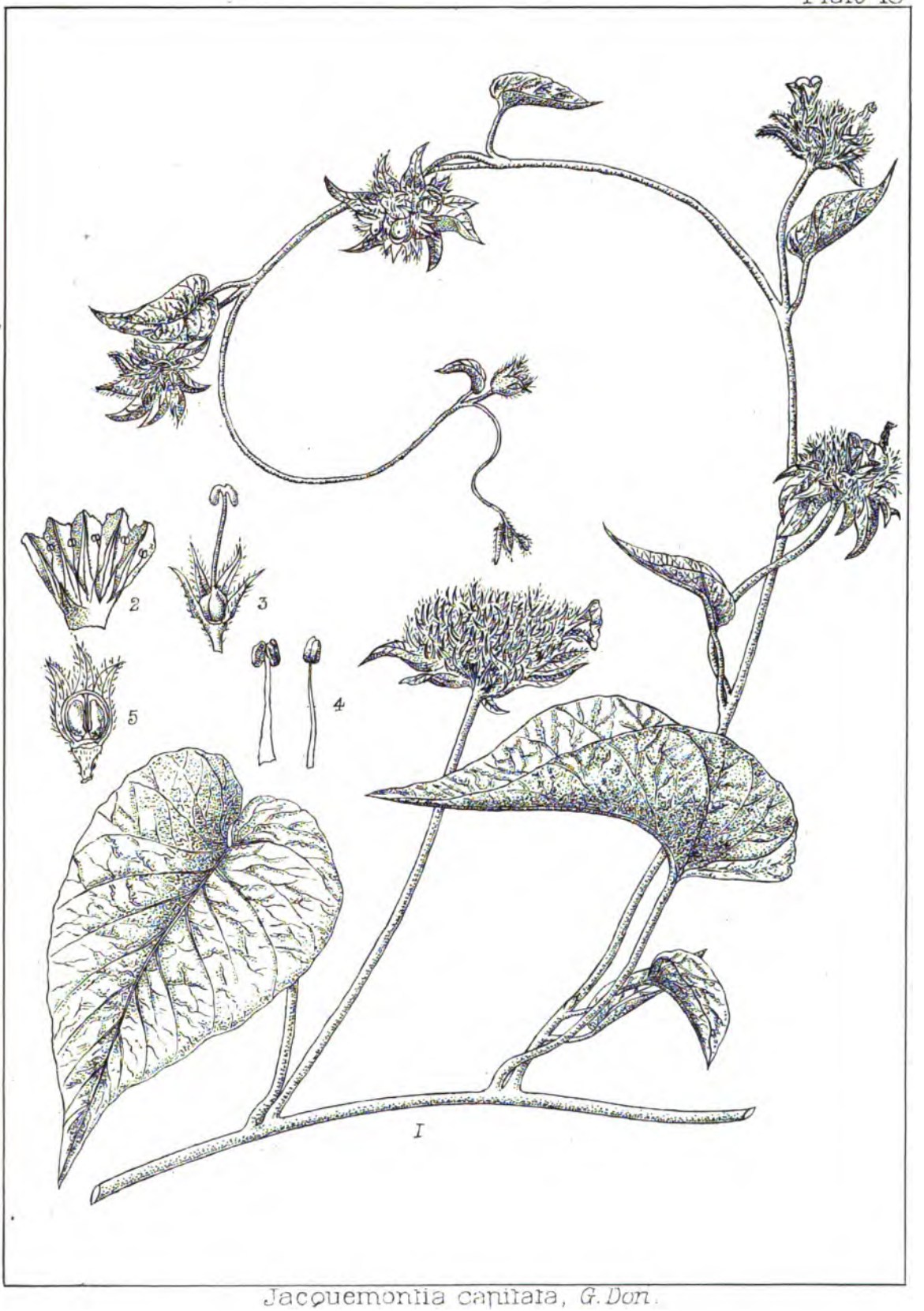
Excoecaria reticulata, *Mull Arg*.



Ophiocaulon gummifera, *Hook f.*

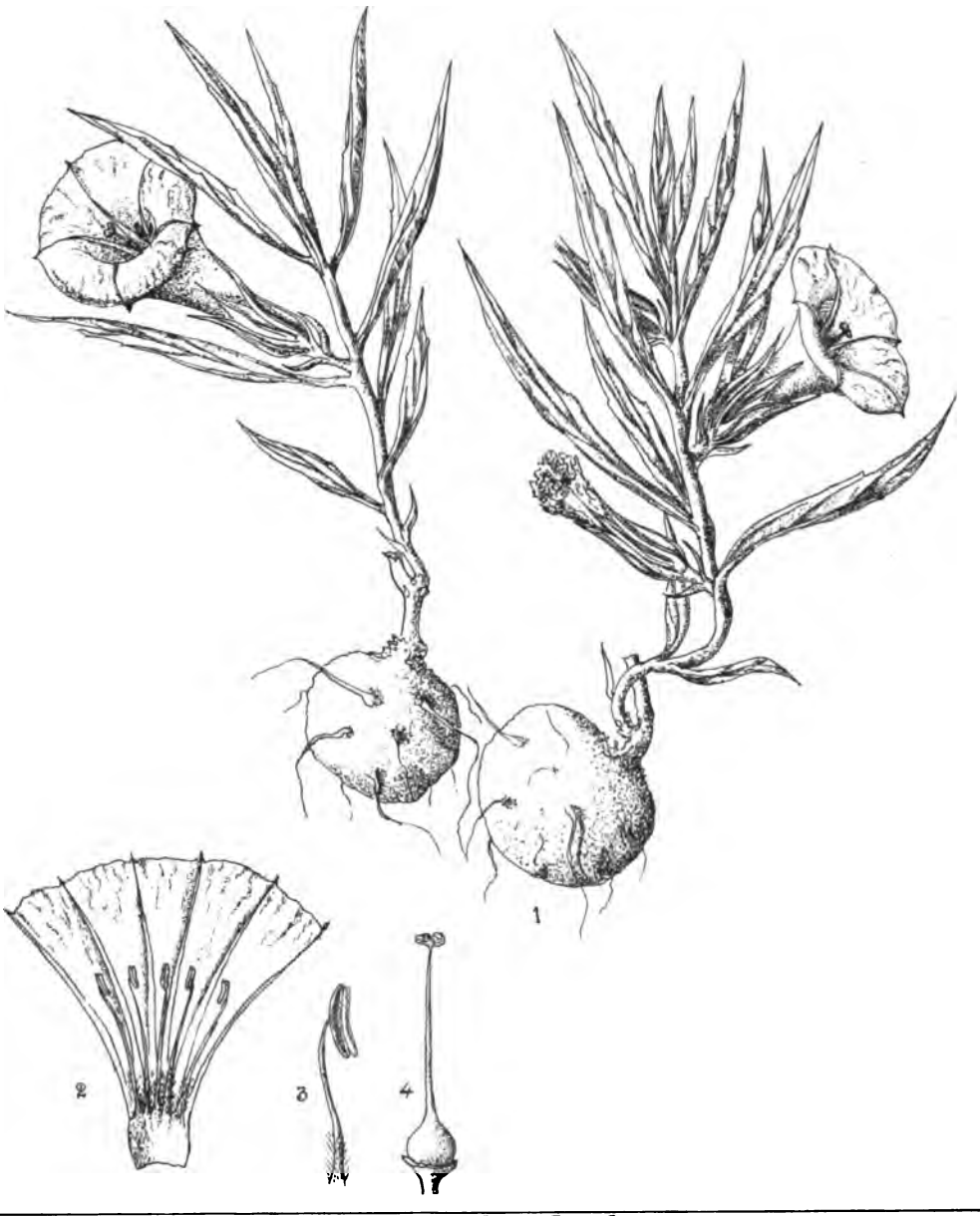


Aster asper, *Less.*

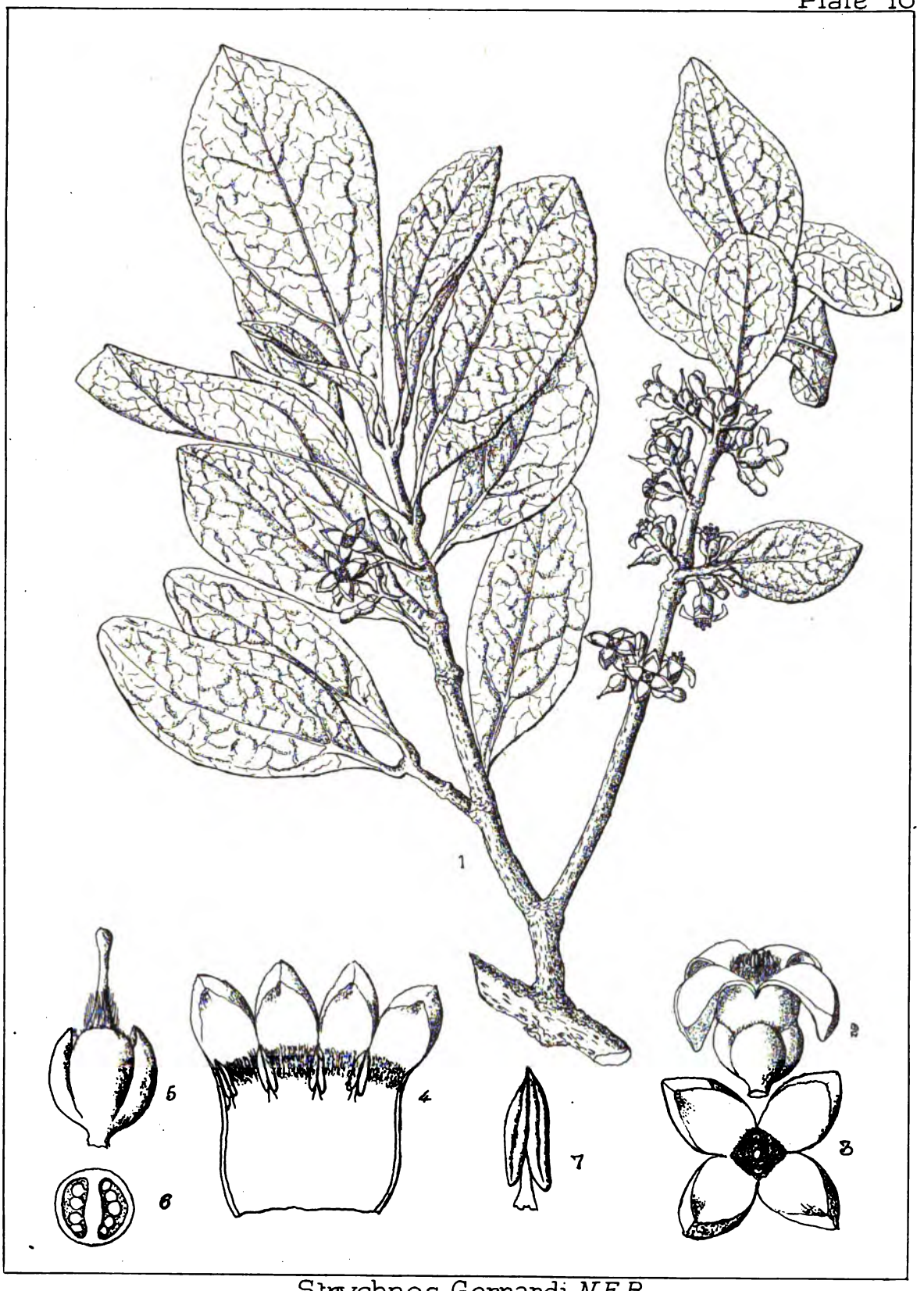


Jacquemontia capitata, *G. Don*.

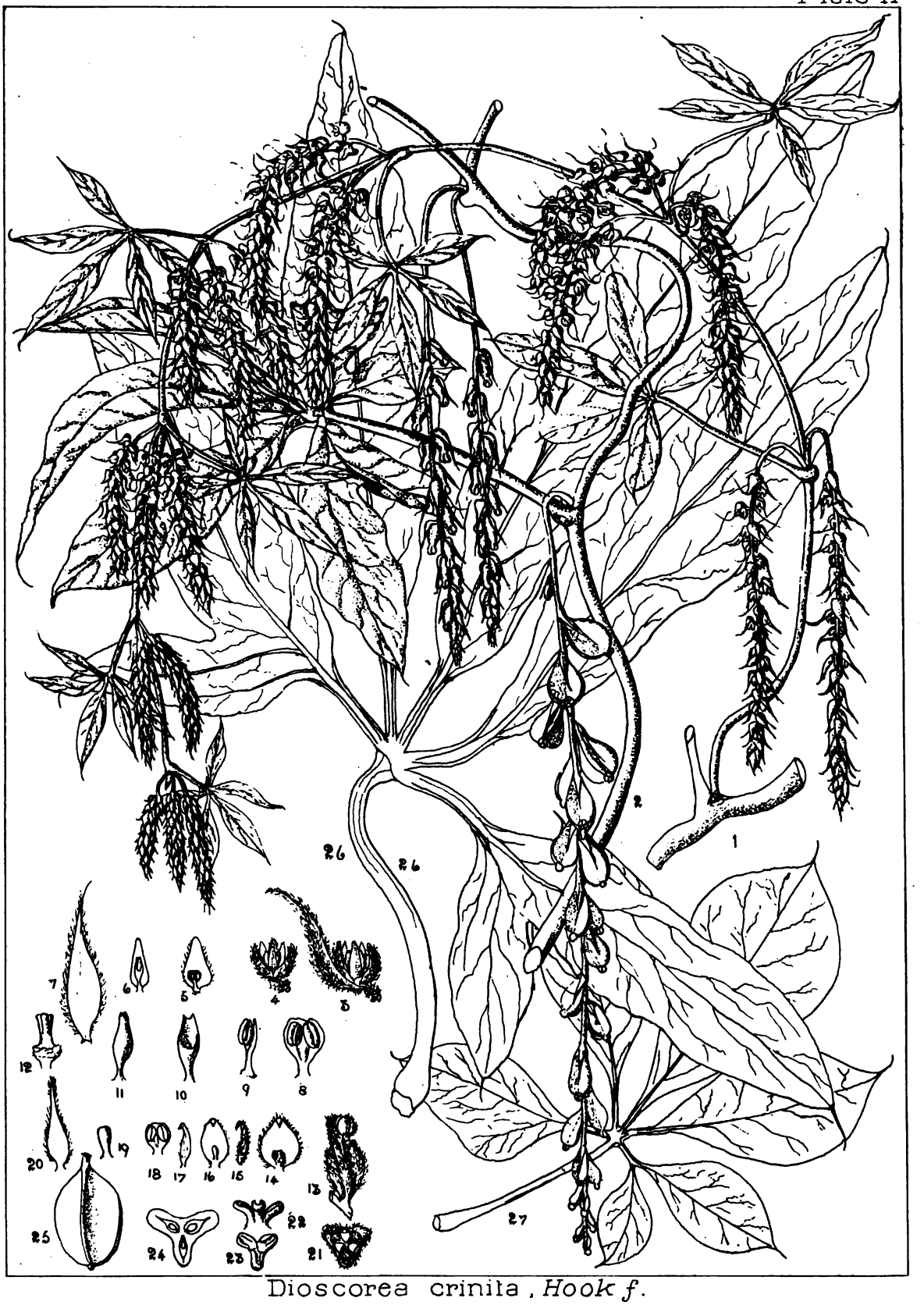
Carissa grandiflora, *A.D.C.*



Ipomoea simplex, *Thunberg*.

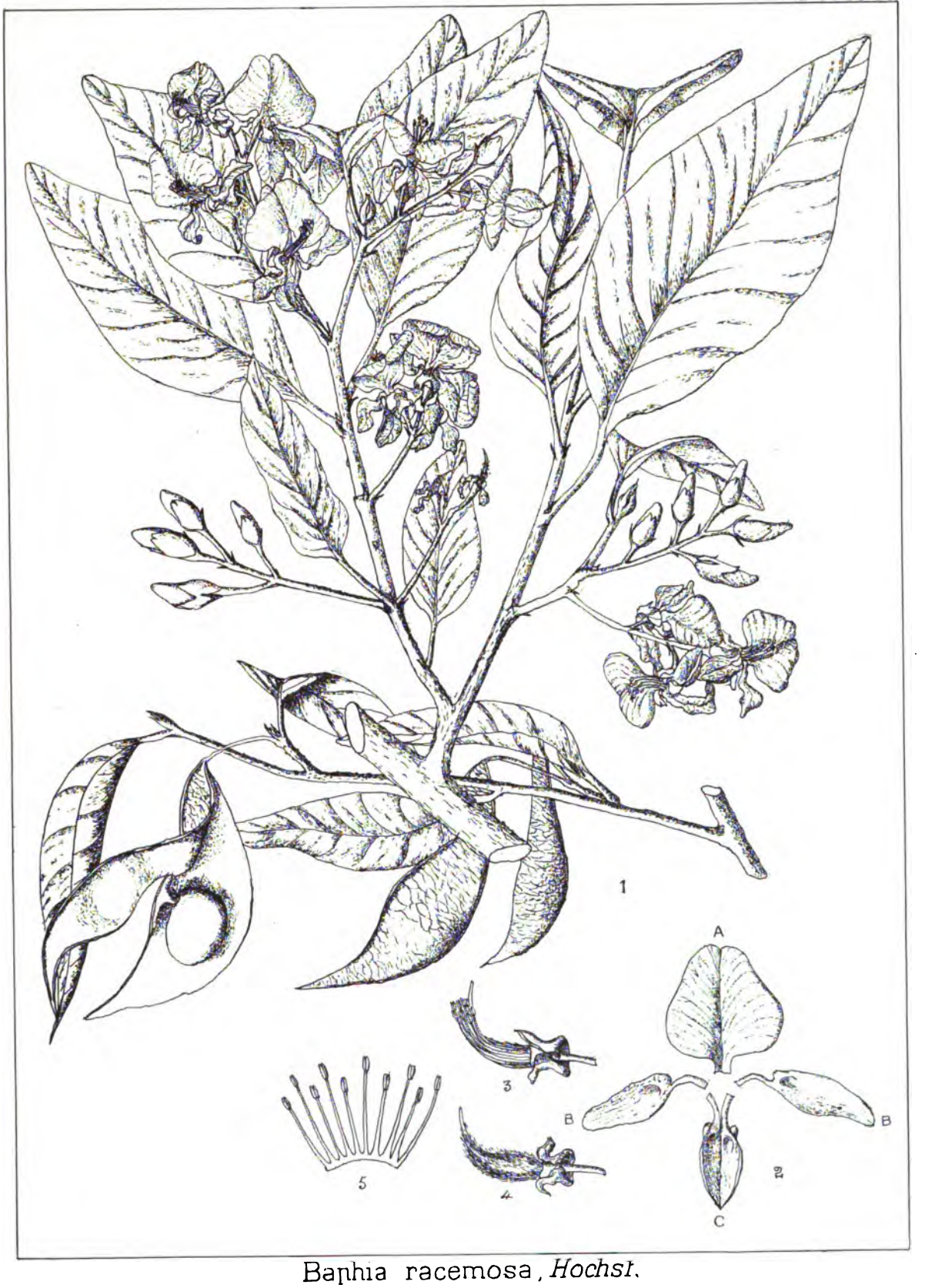


Strychnos Gerrardi, *N.E.B.*

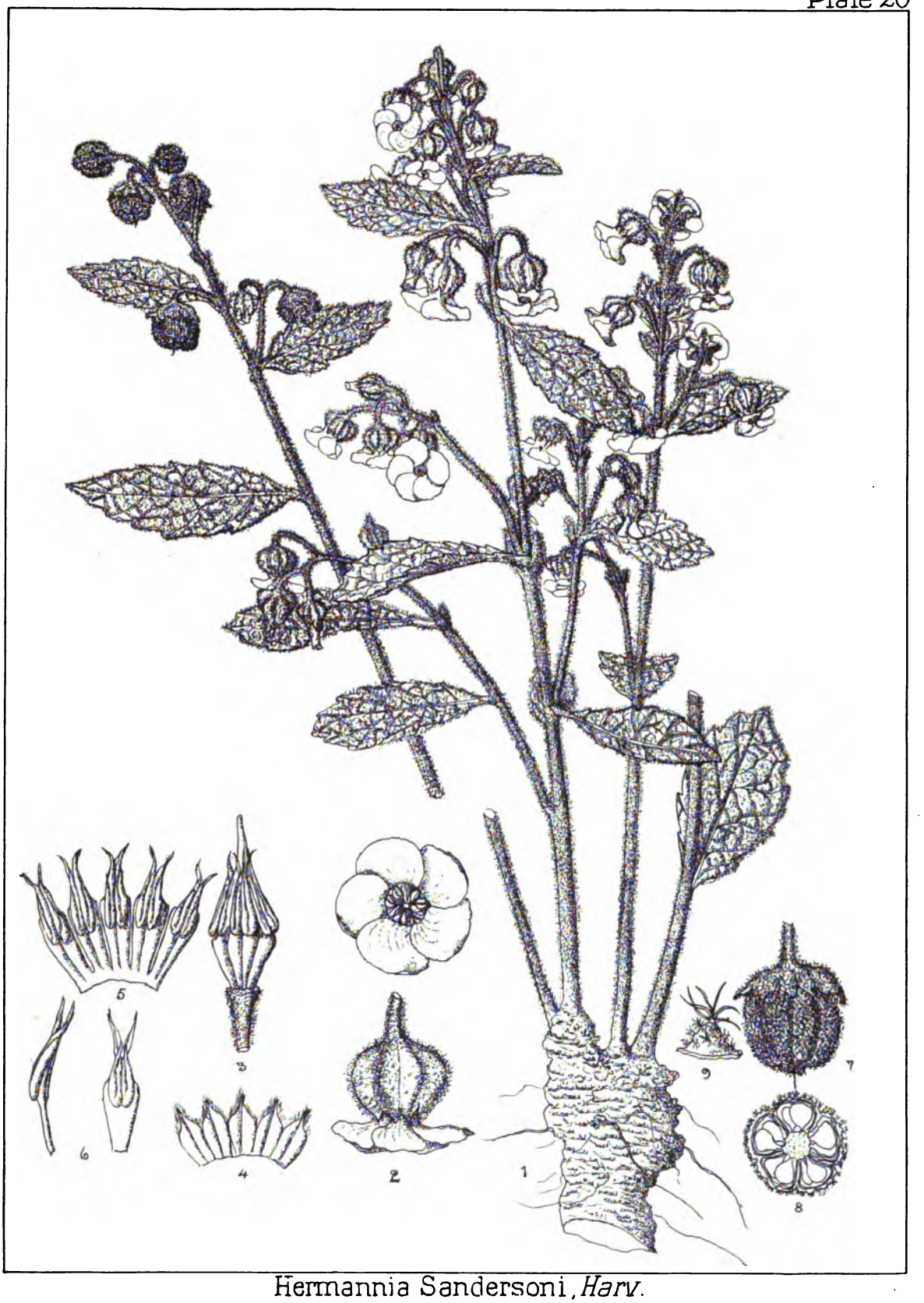


Dioscorea crinita, *Hook f.*

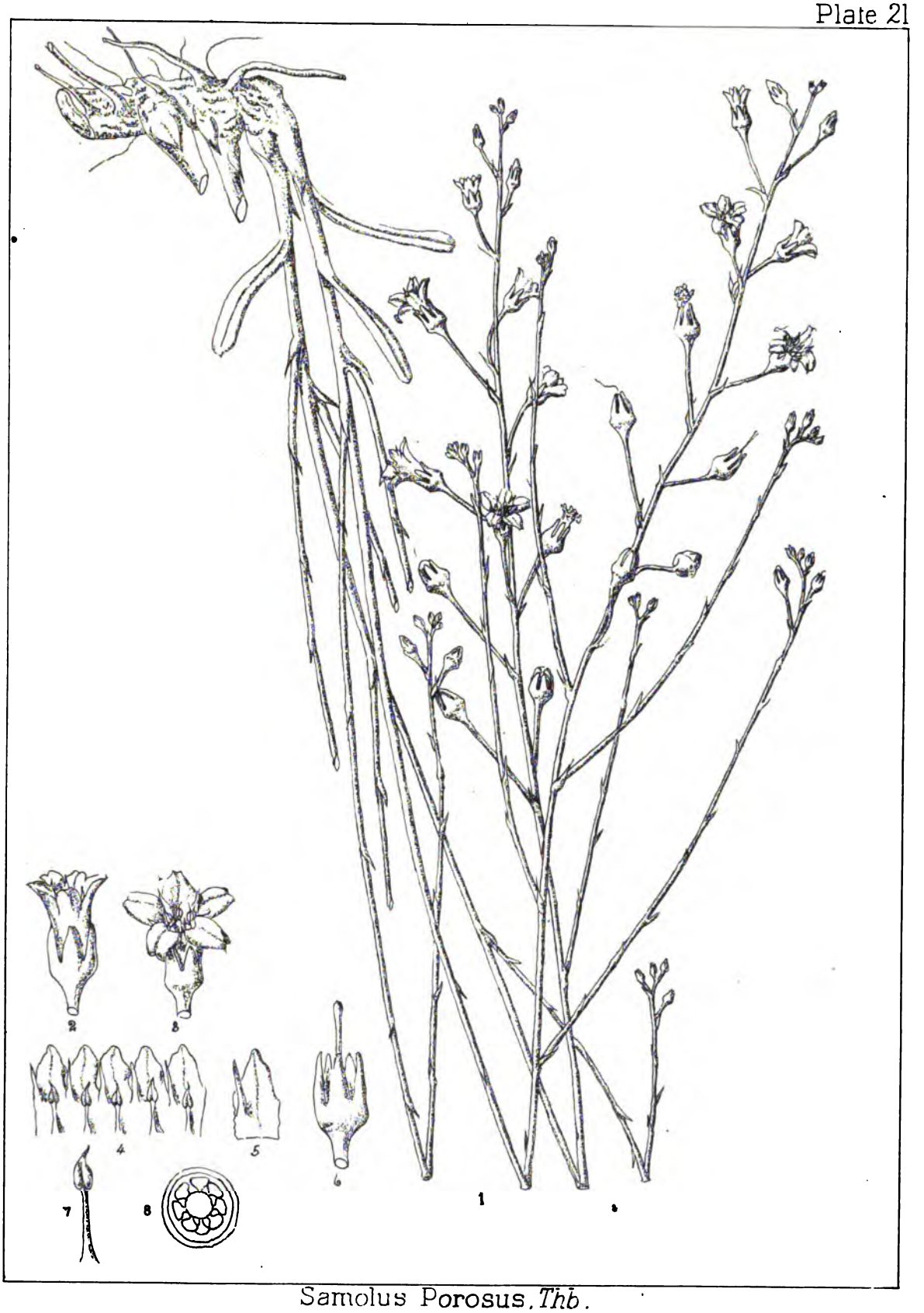
Apodytes dimidiata *E. Meyer.*



Banhia racemosa, *Hochst.*

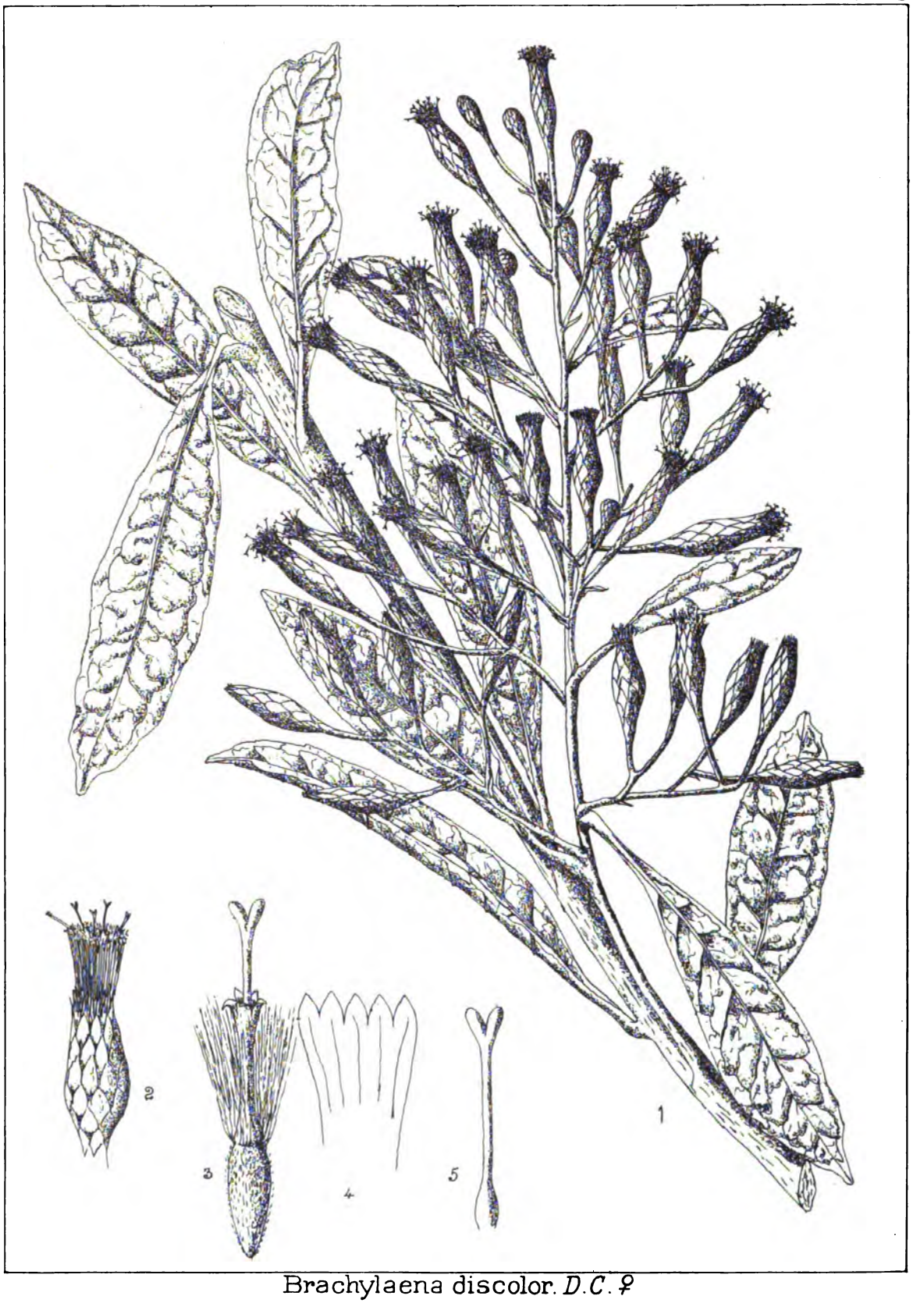


Hermannia Sandersoni, *Harv.*

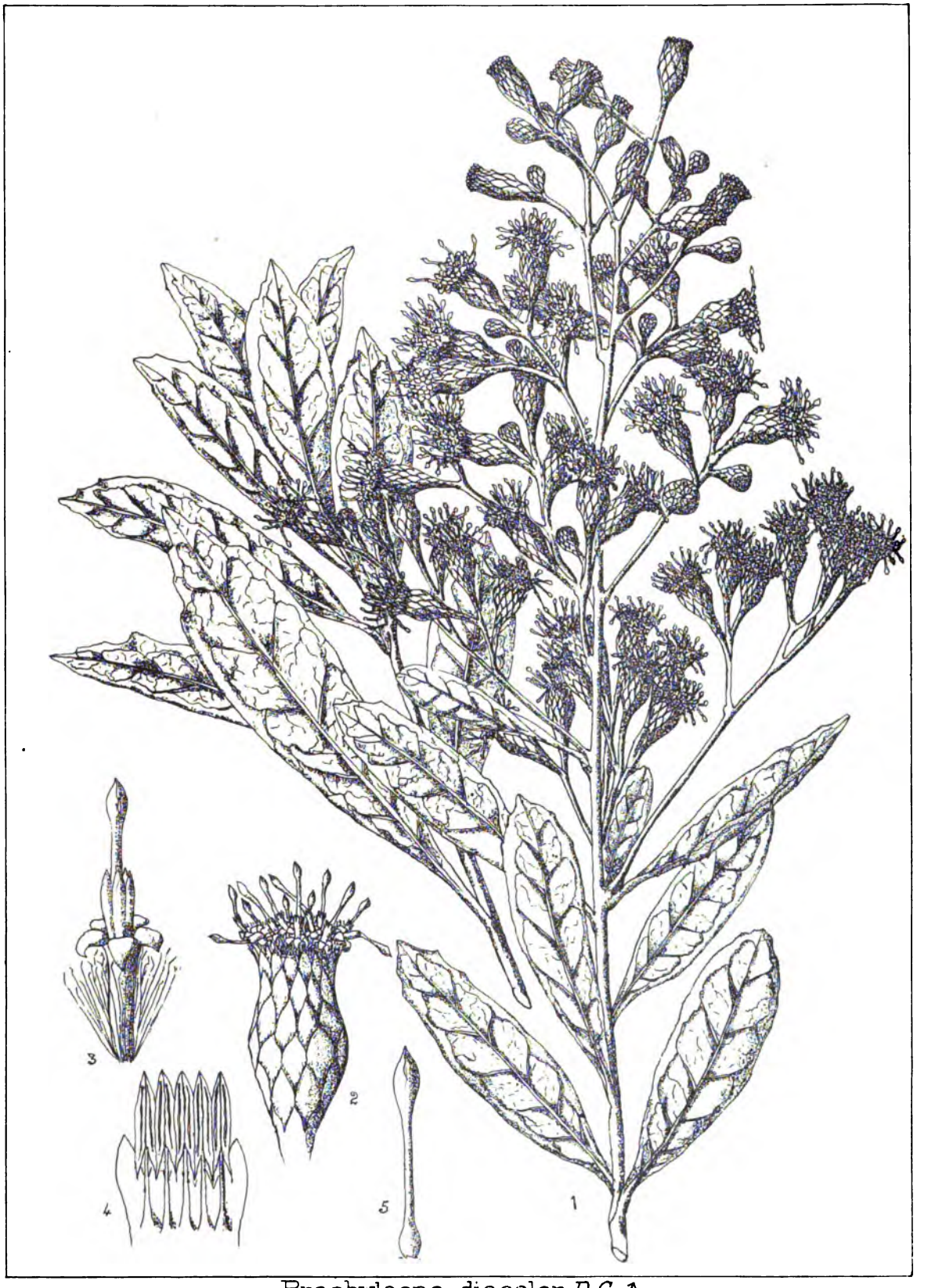


Samolus Porosus. *Thb.*

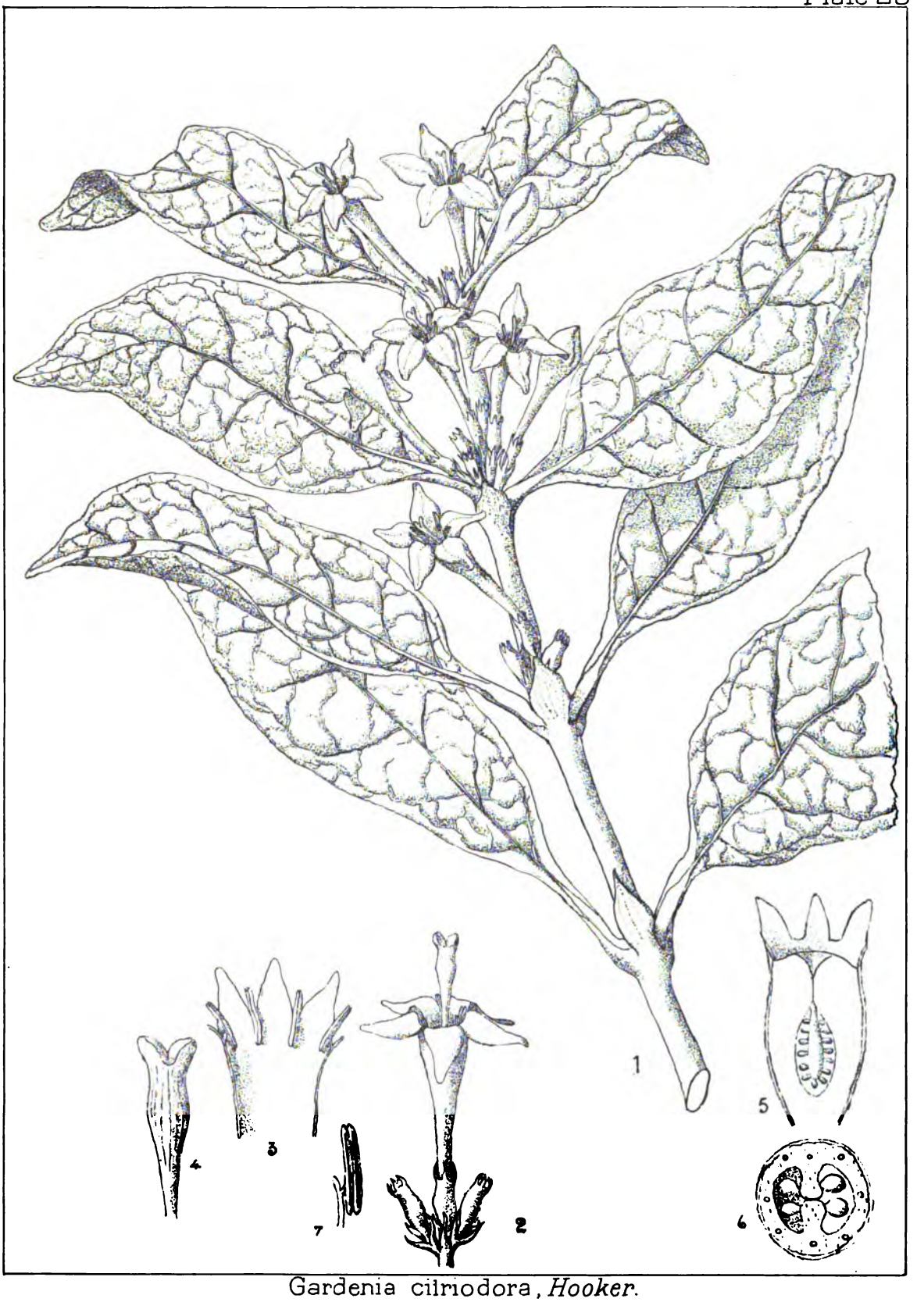
Ecteinanthus origanoides, *T. And.*



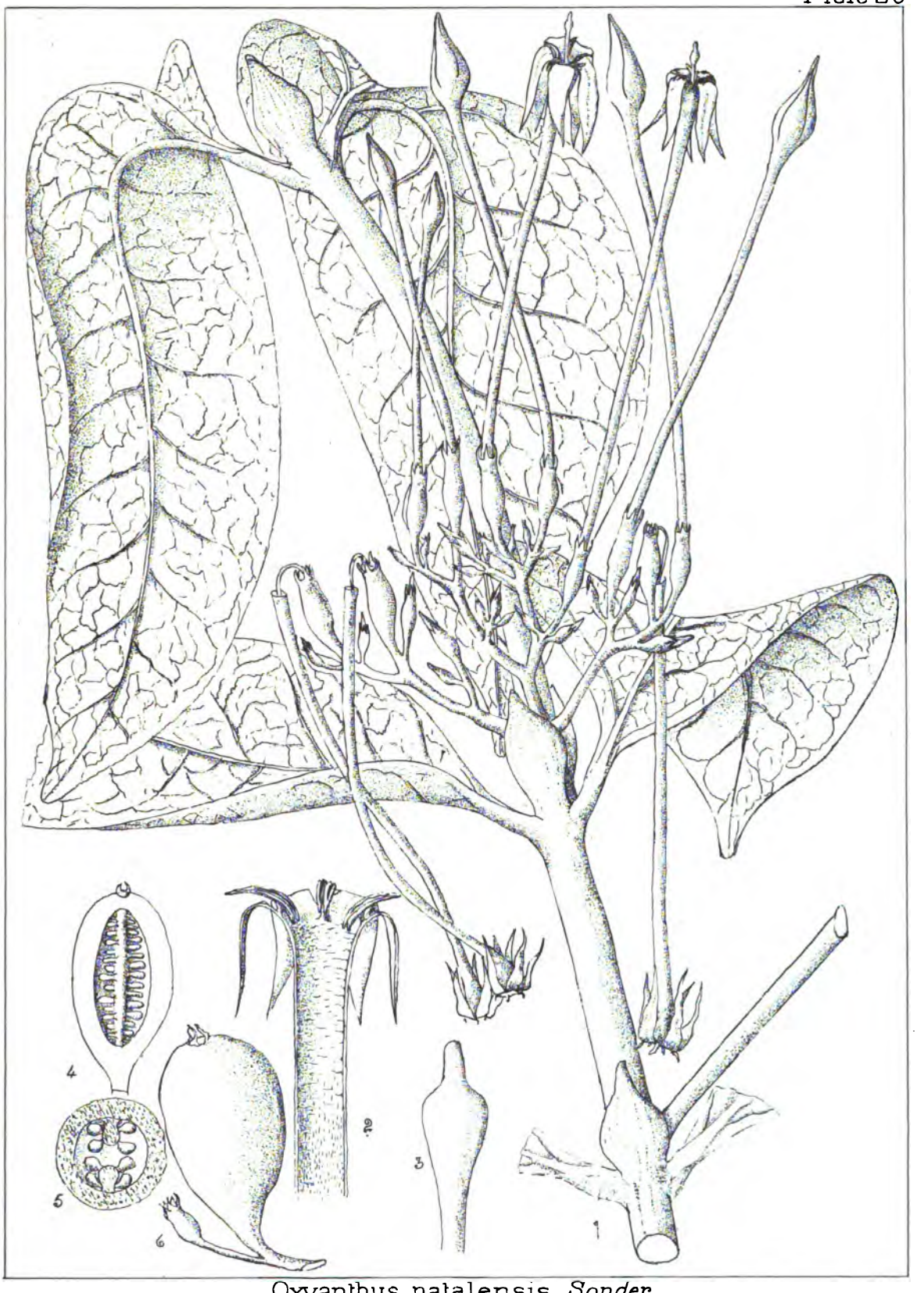
Brachylaena discolor. *D.C.* ♀



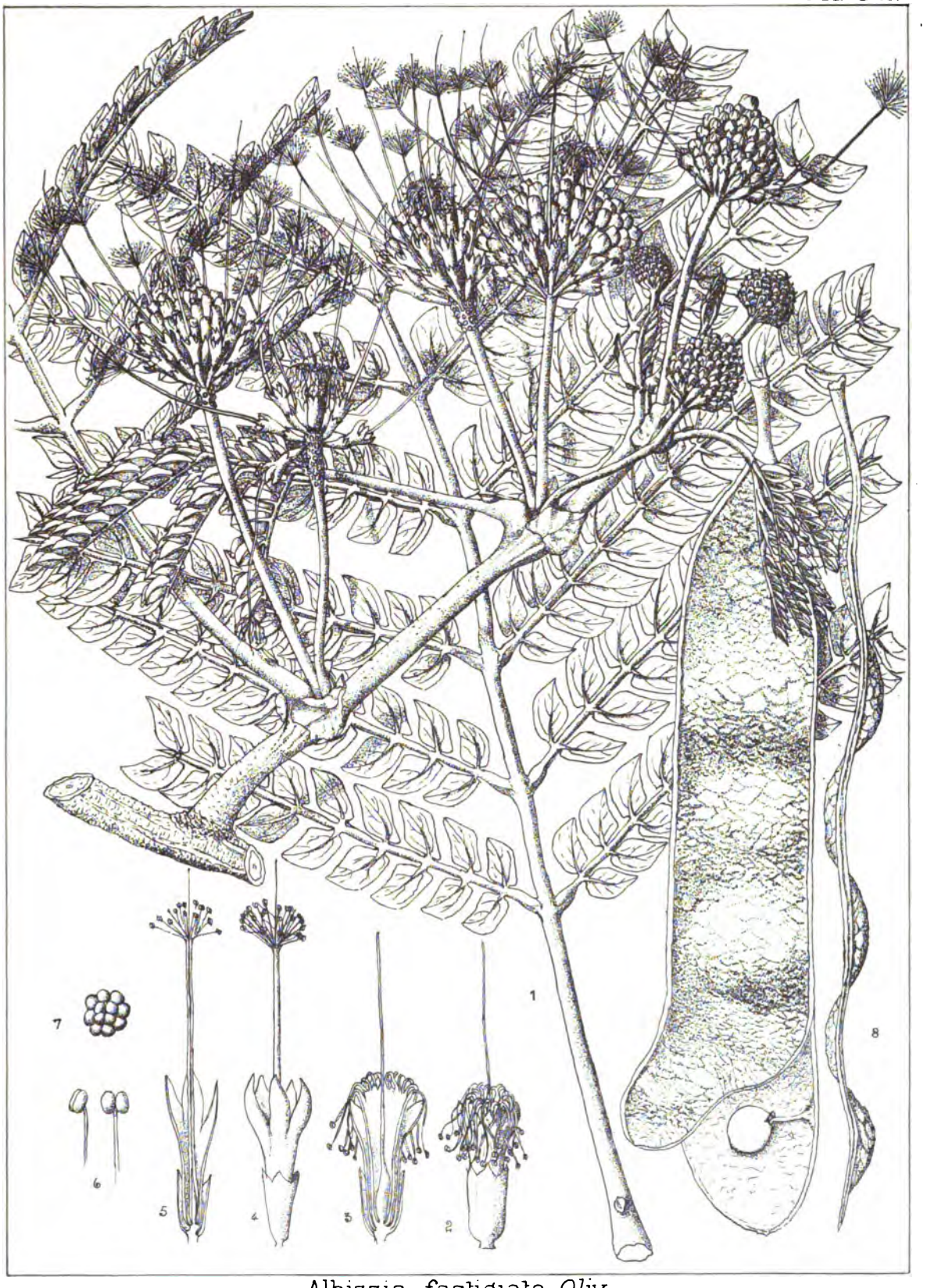
Brachylaena discolor *D.C.* ♂



Gardenia ciliodora, *Hooker*.

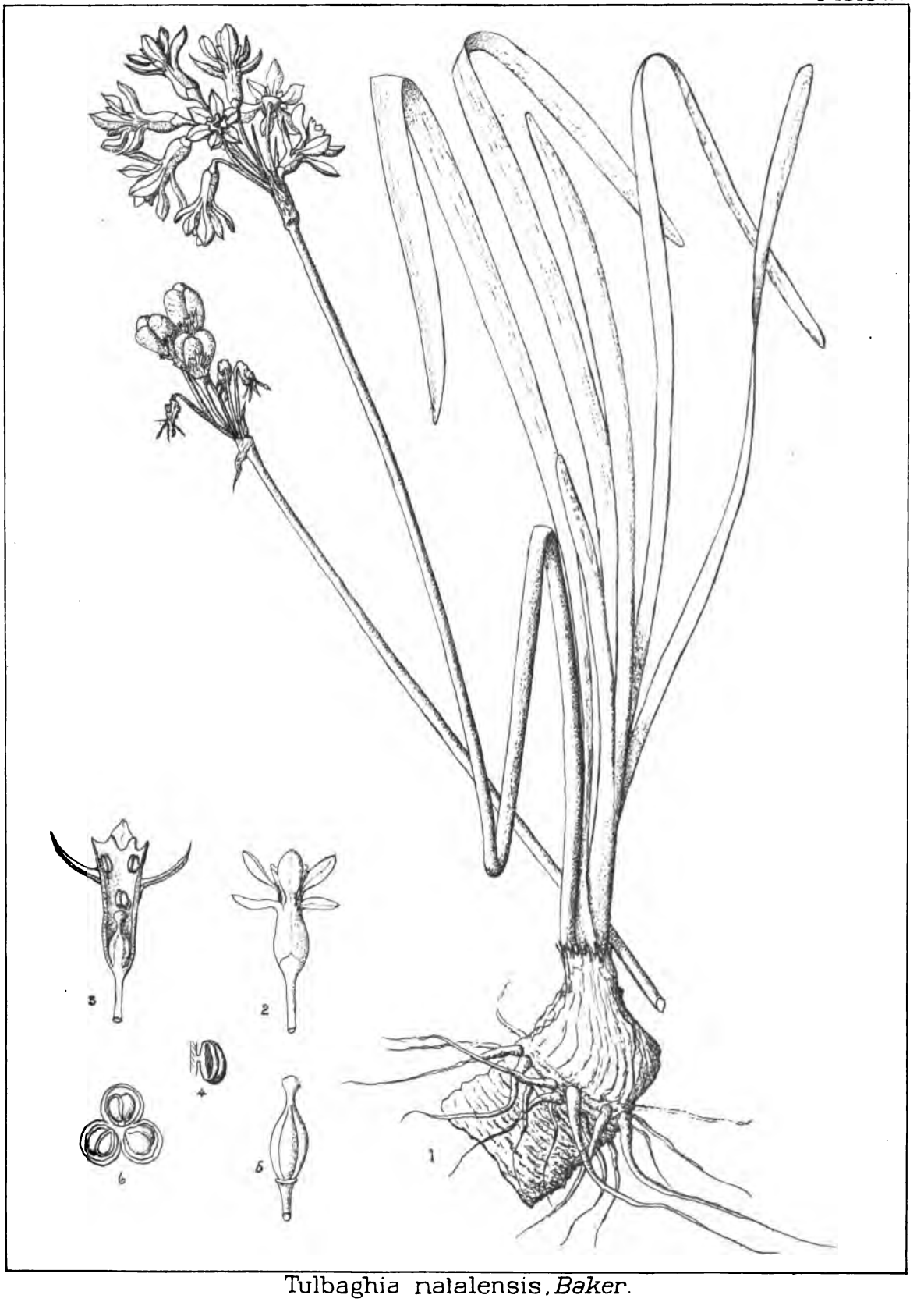


Oxyanthus natalensis, *Sonder.*

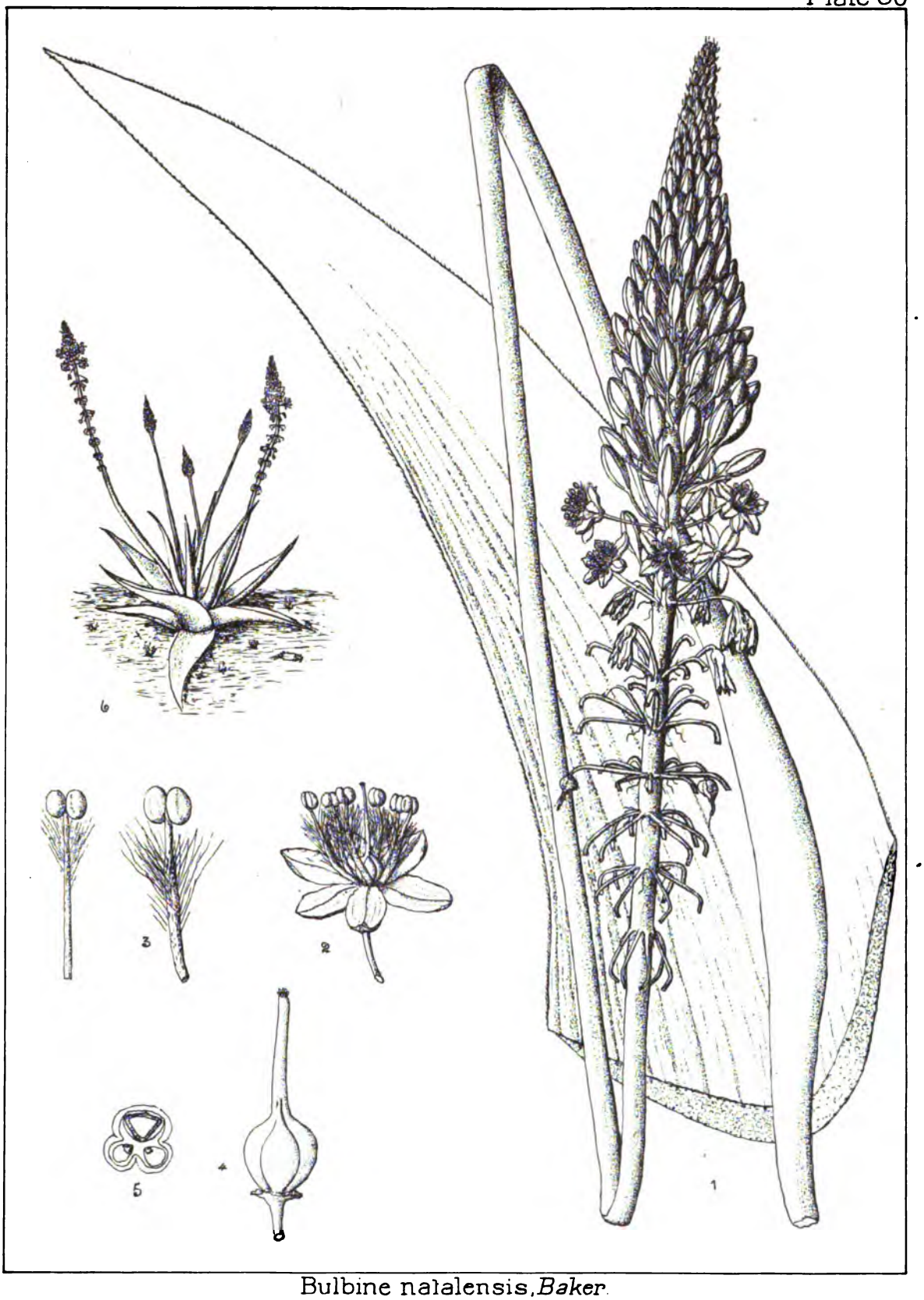


Albizzia fastigiata. *Oliv.*

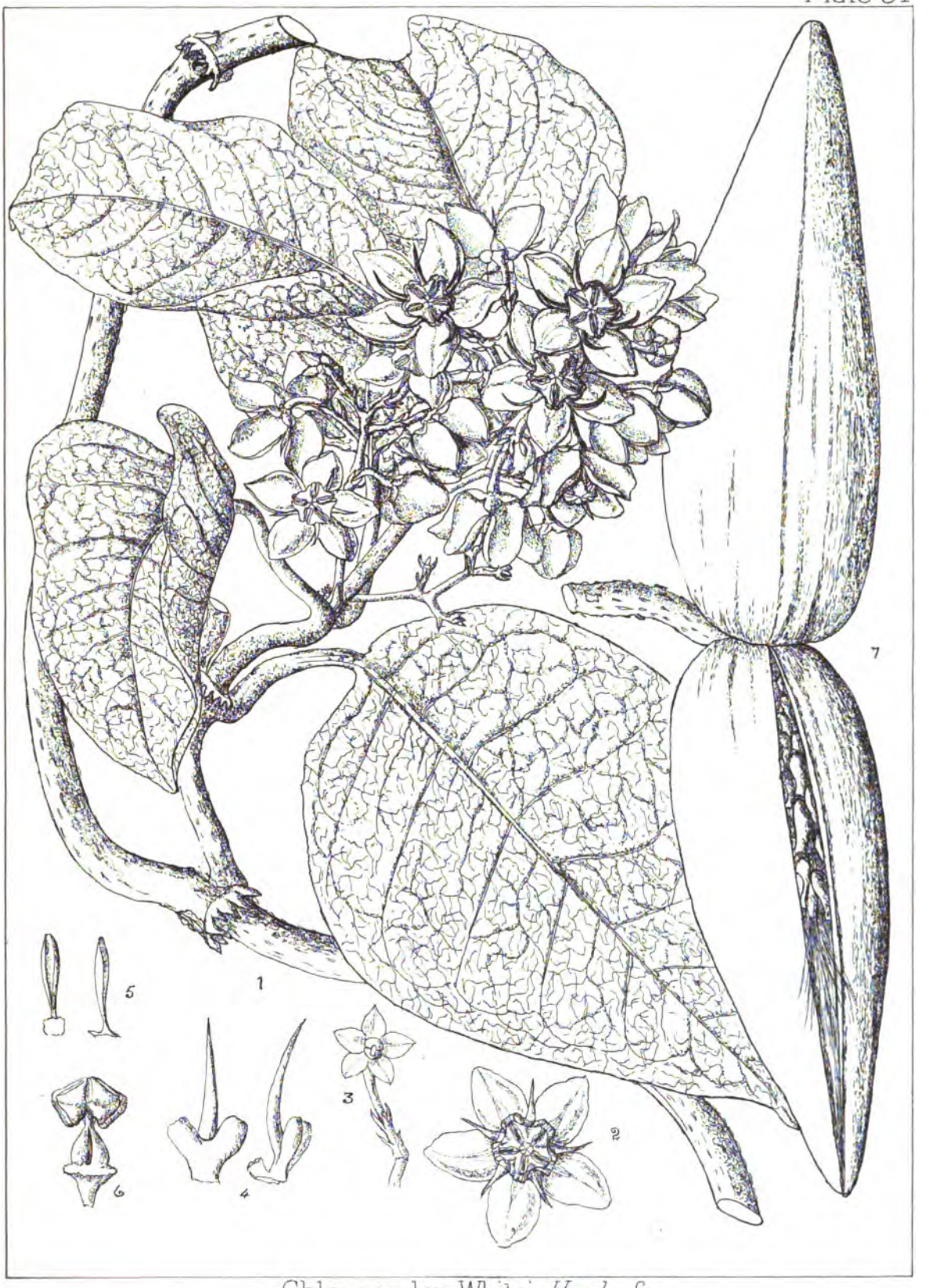
Celtis Kraussiana. *Bernh.*



Tulbaghia natalensis, *Baker*.

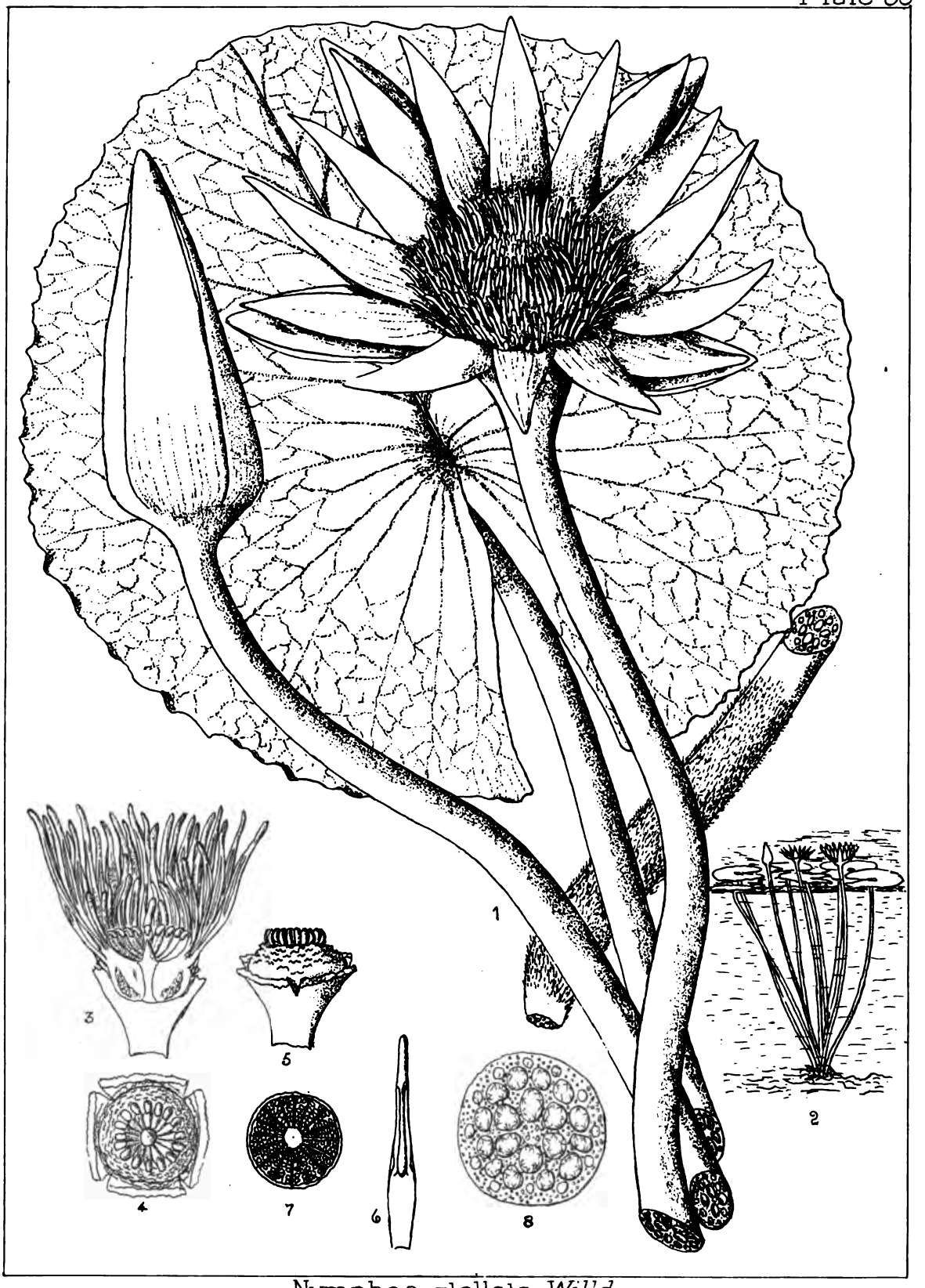


Bulbine natalensis, *Baker*.

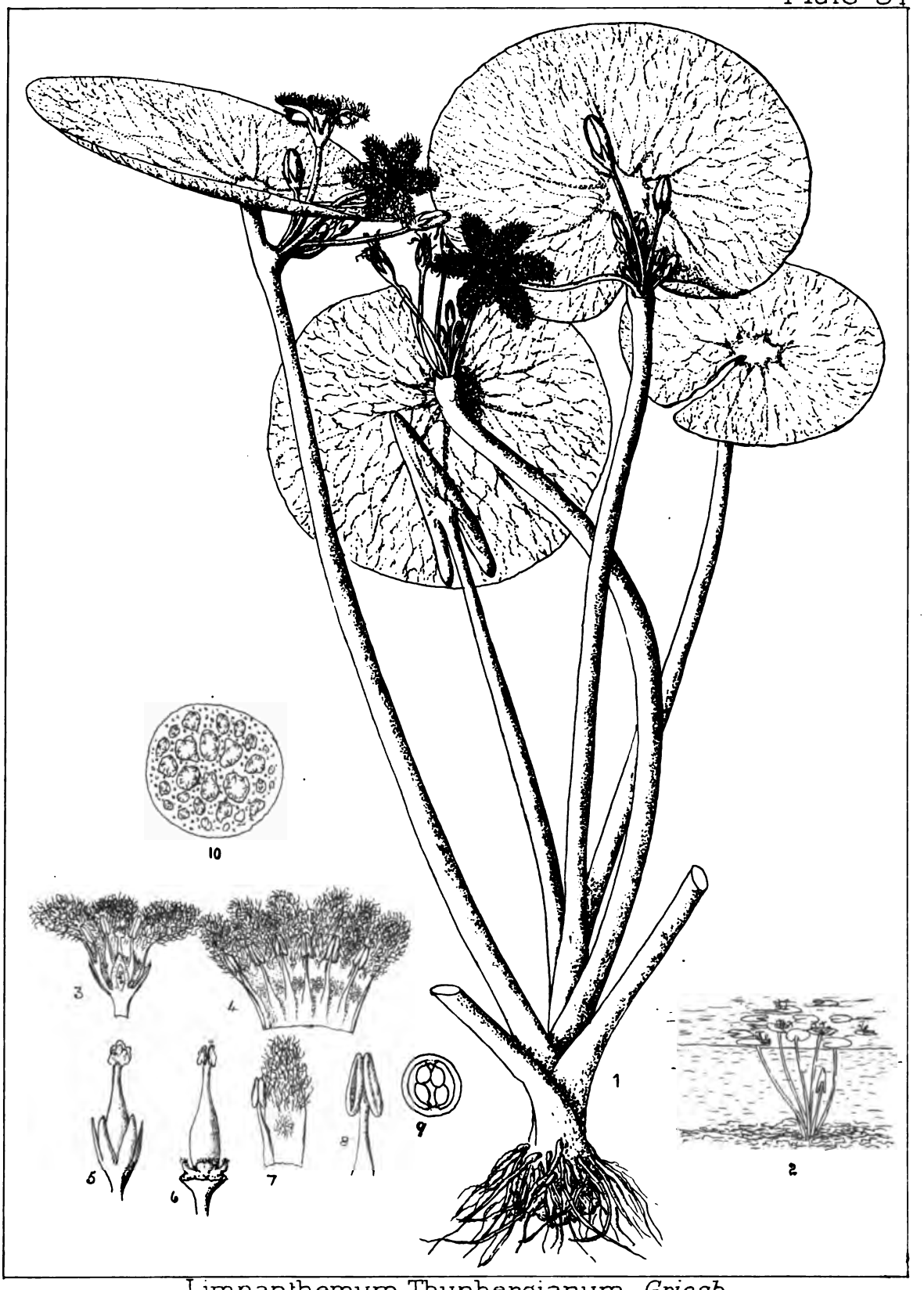


Chlorocodon Whitei *Hook, f.*

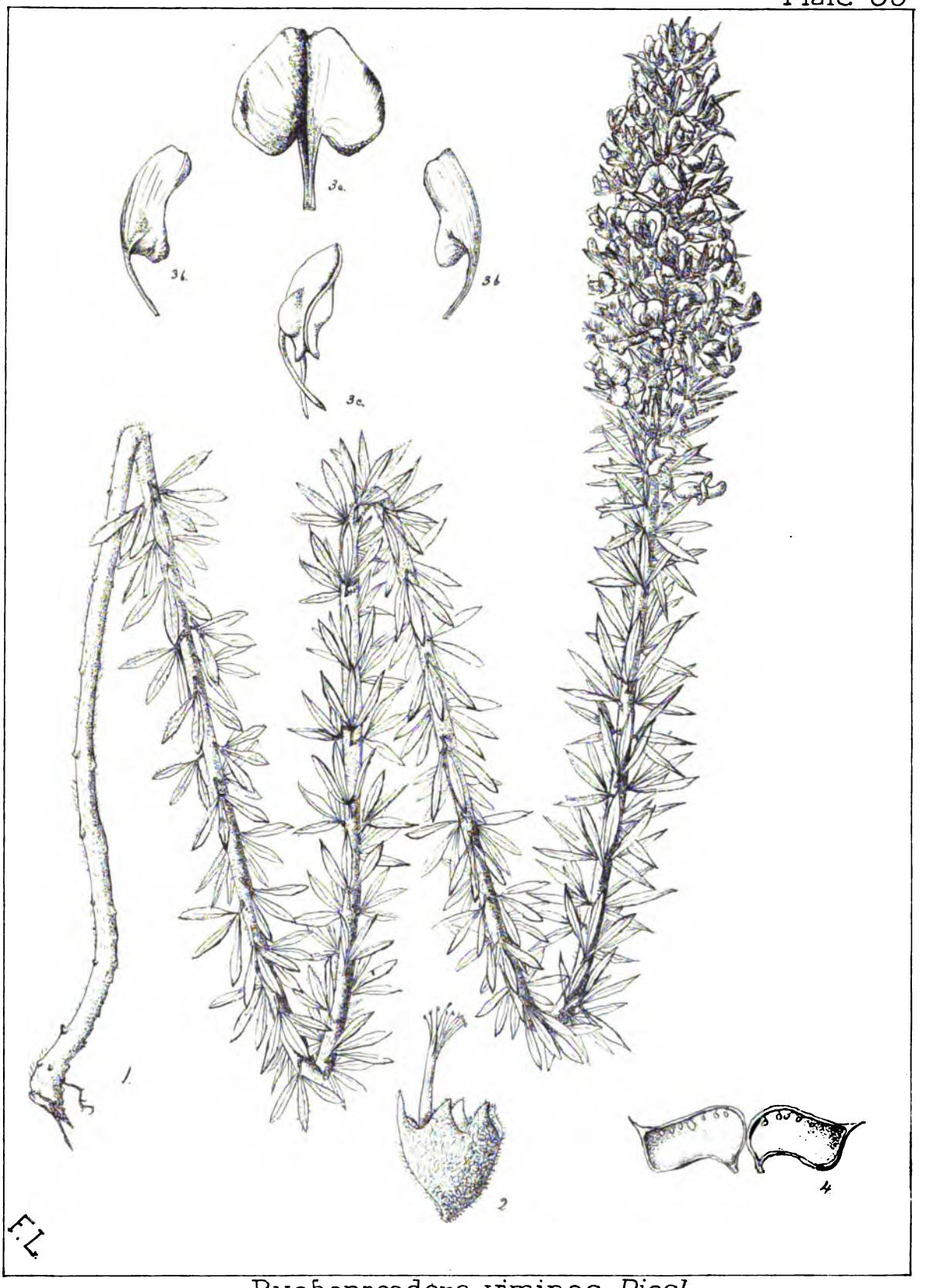
Millettia caffra, *Meisn.*



Nymphea stellata, *Willd.*



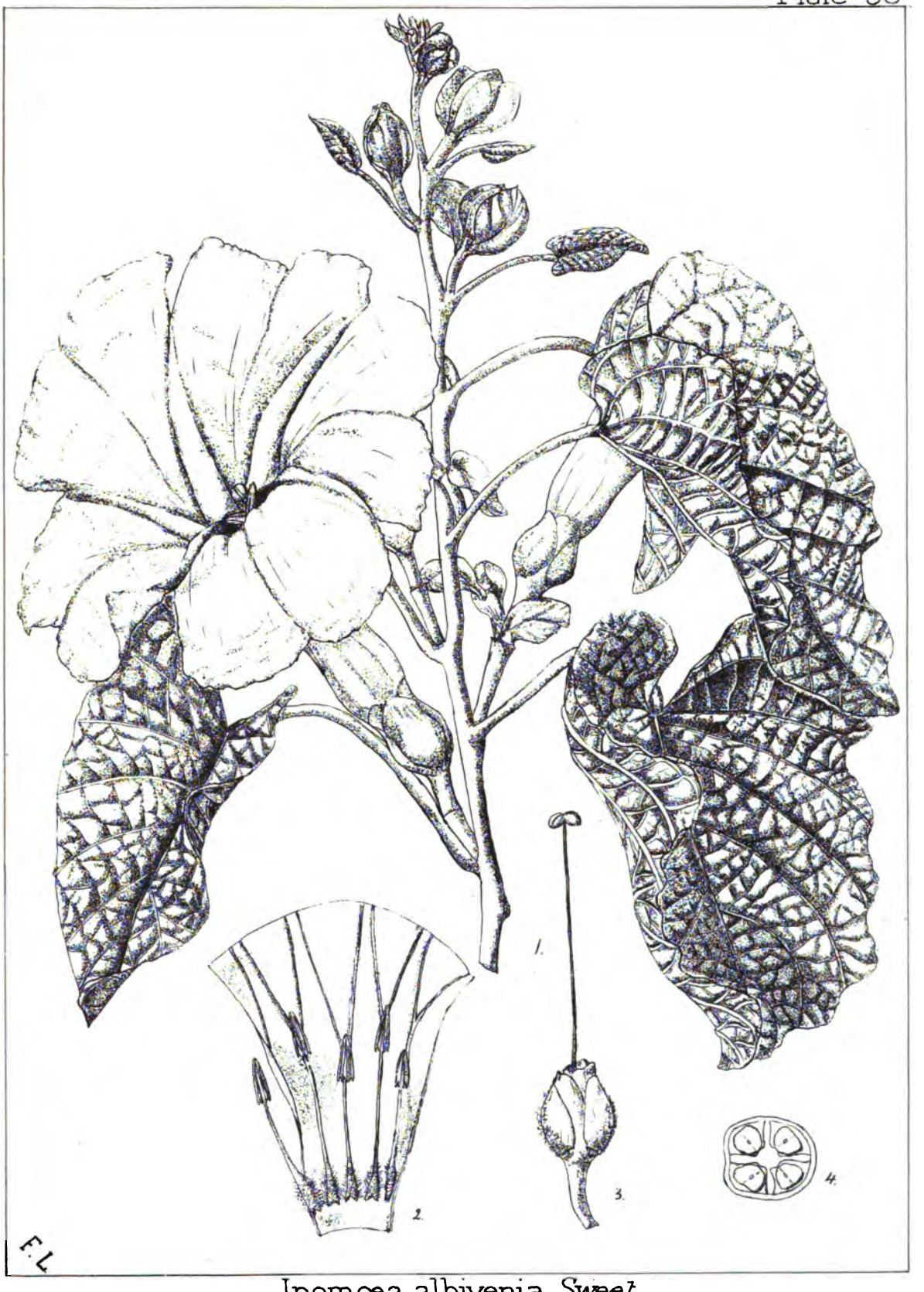
Limnanthemum Thunbergianum, *Griesb.*



Buchenrœdera viminea, *Piesl.*

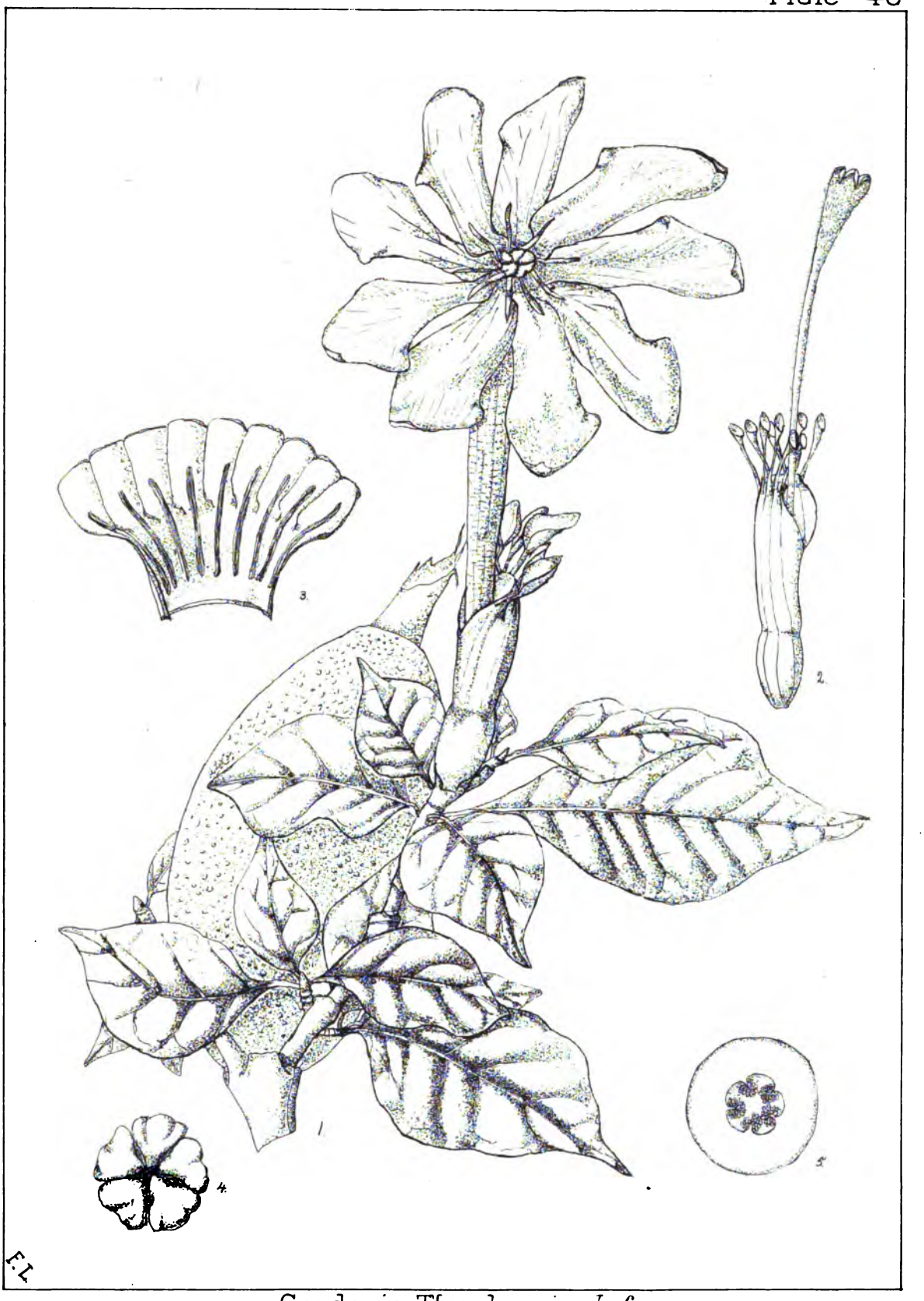
Oldenlandia macrophylla, *D.C.*

Wahlenbergia undulata, *A.D.C.*

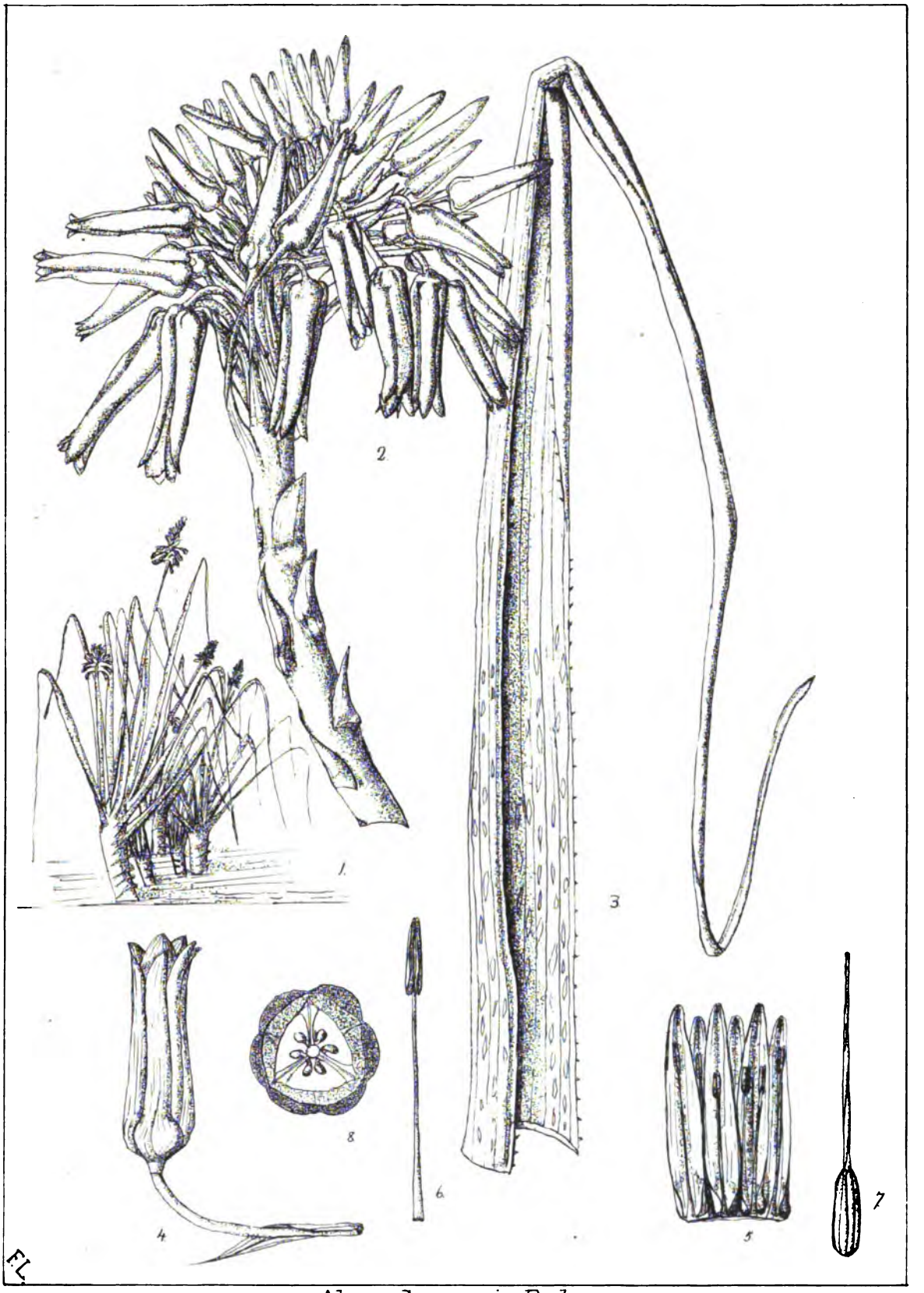


Ipomœa albivenia, *Sweet.*

Entada natalensis, *Bth.*



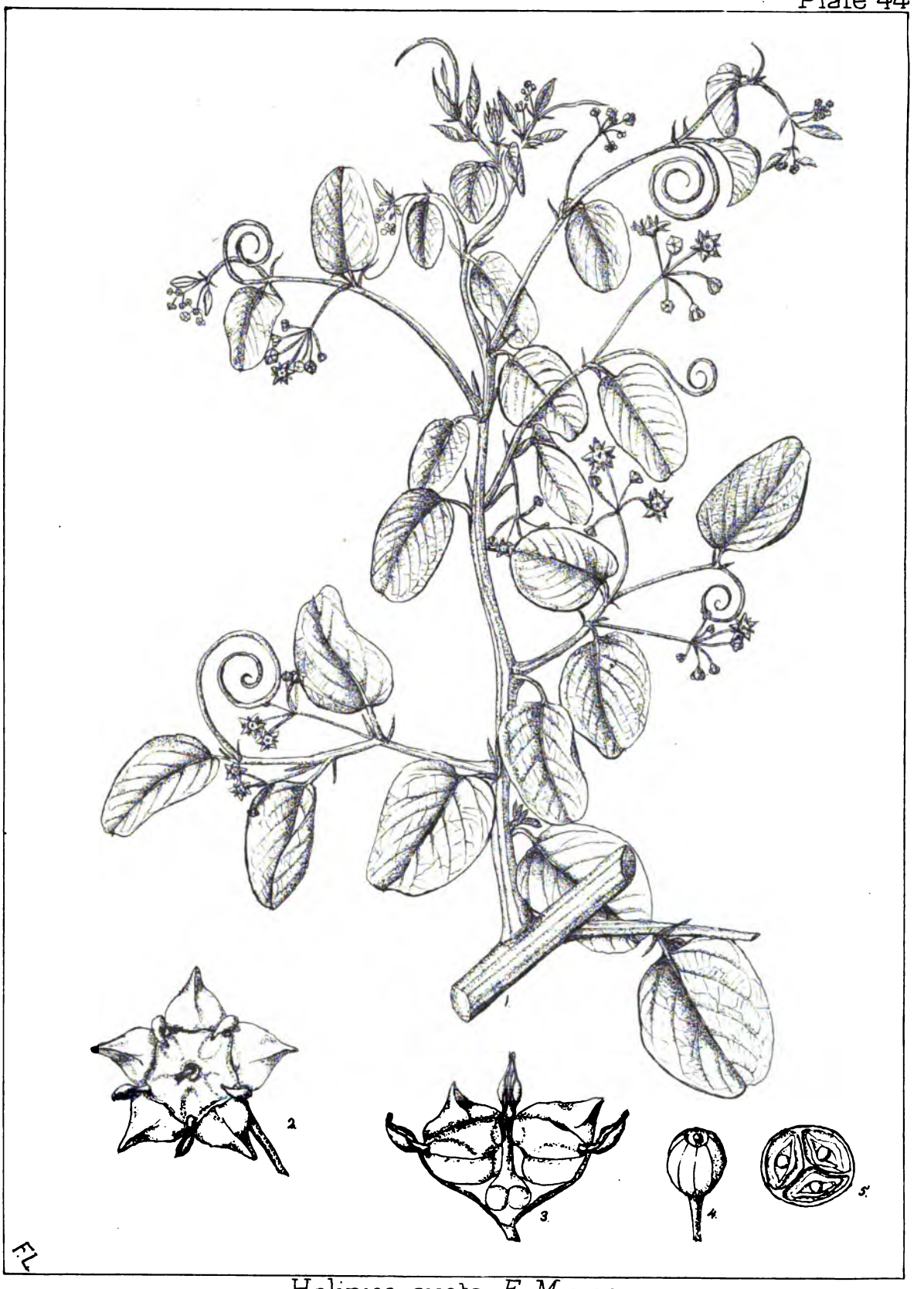
Gardenia Thunbergia, *L.f.*



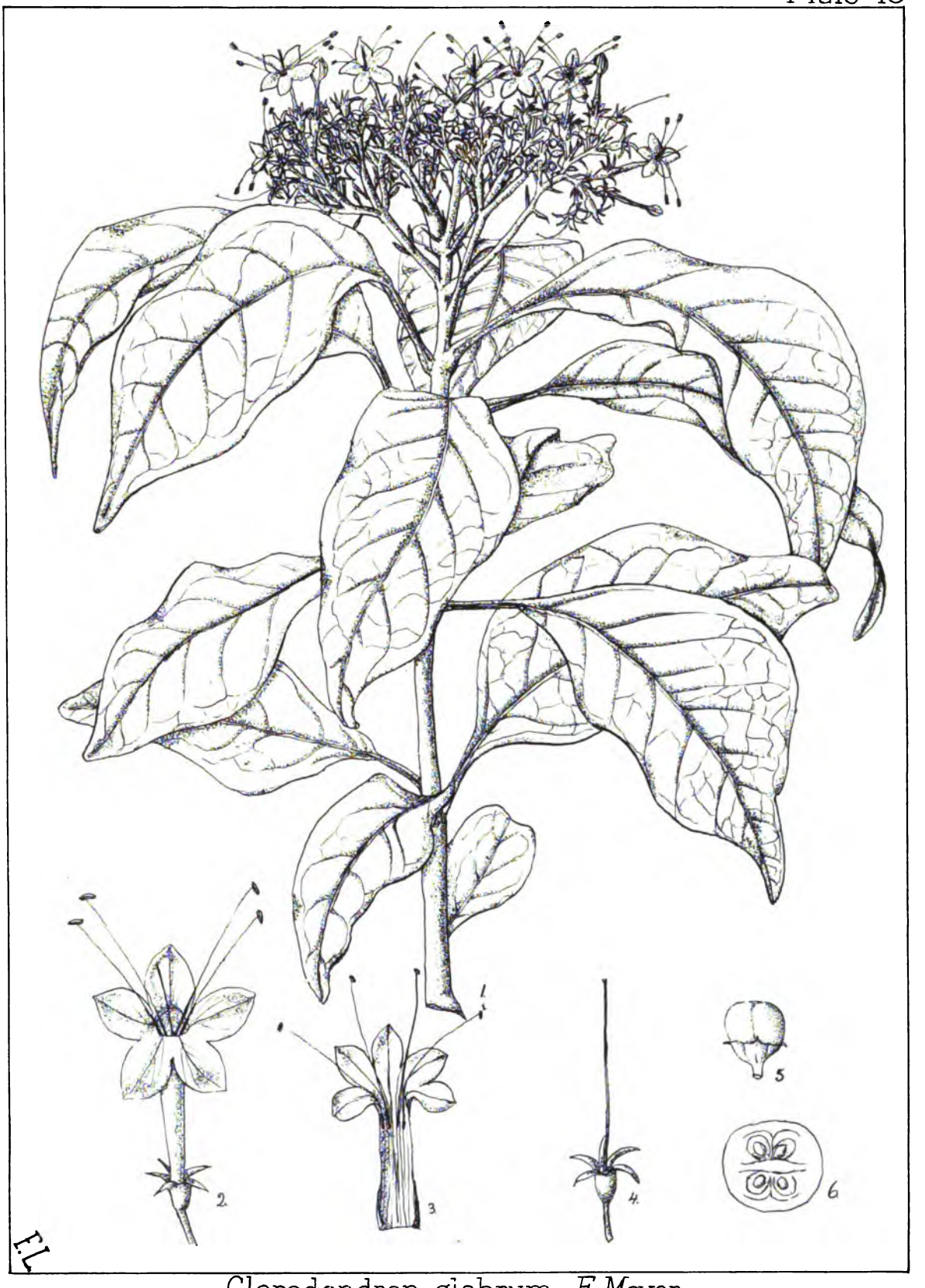
Aloe Cooperi. *Baker*.

Grewia caffra. *Meisn.*

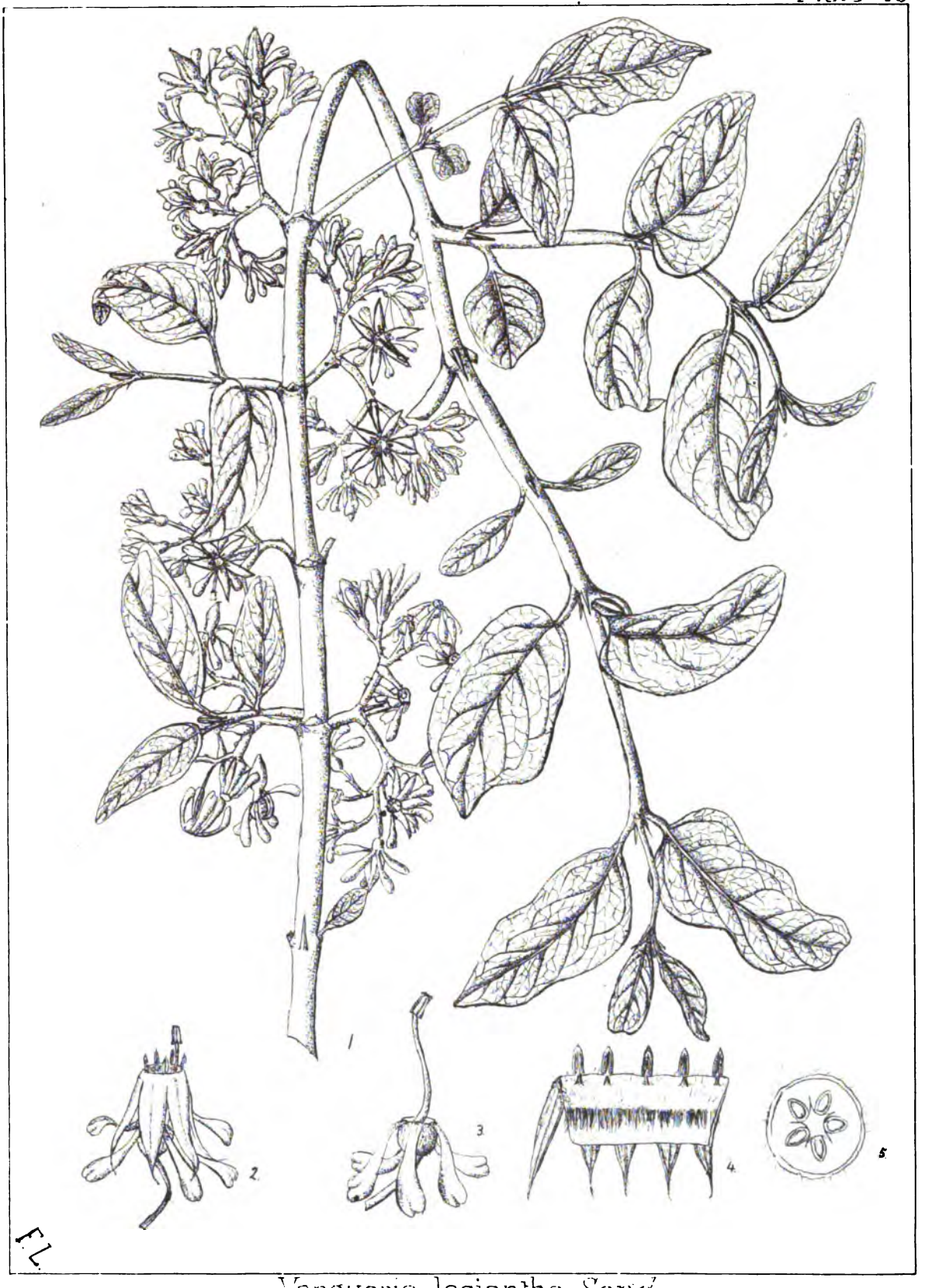
Mimusops caffra, *E. Meyer.*



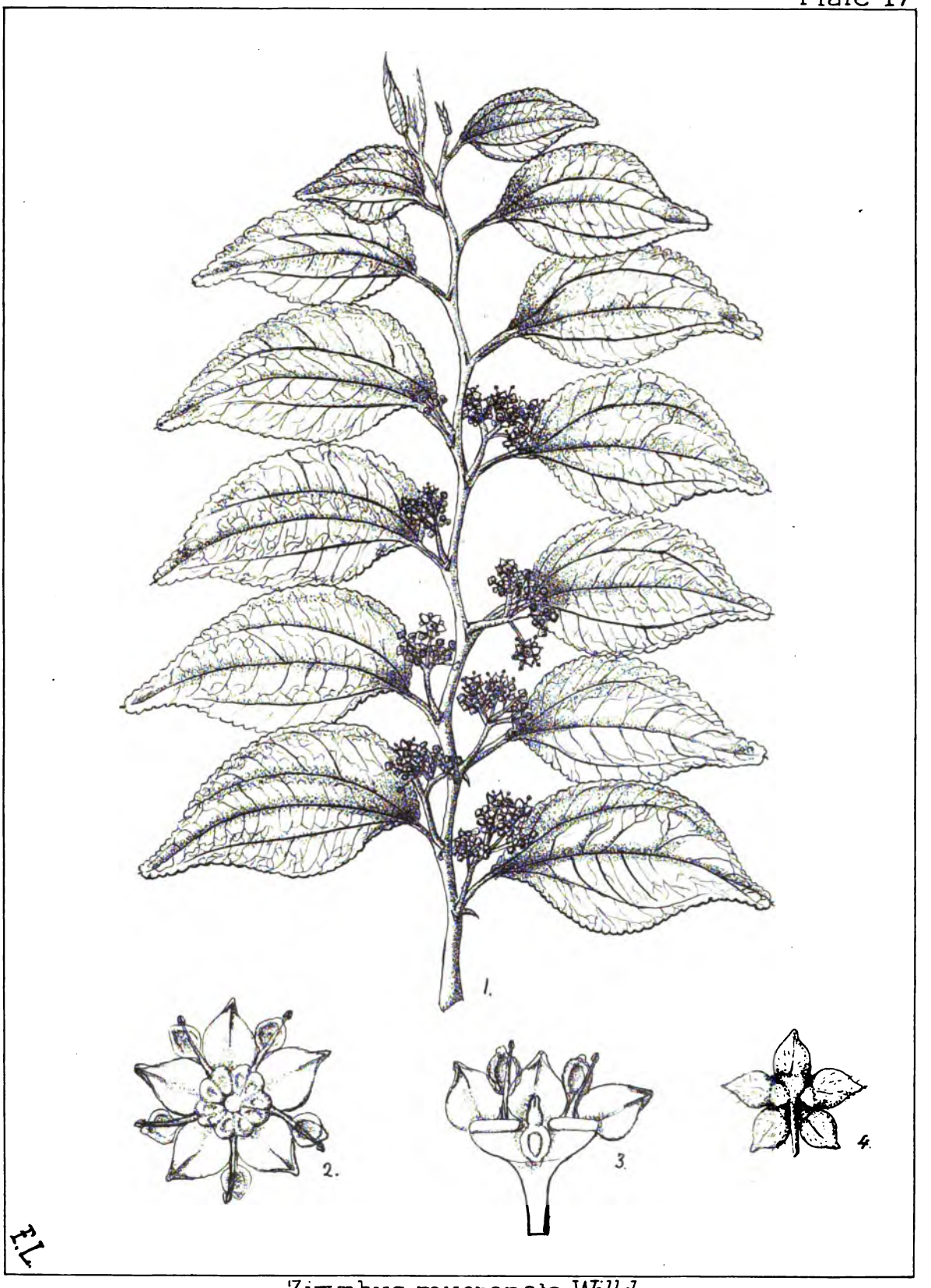
Helinus ovata. *E. Meyer.*



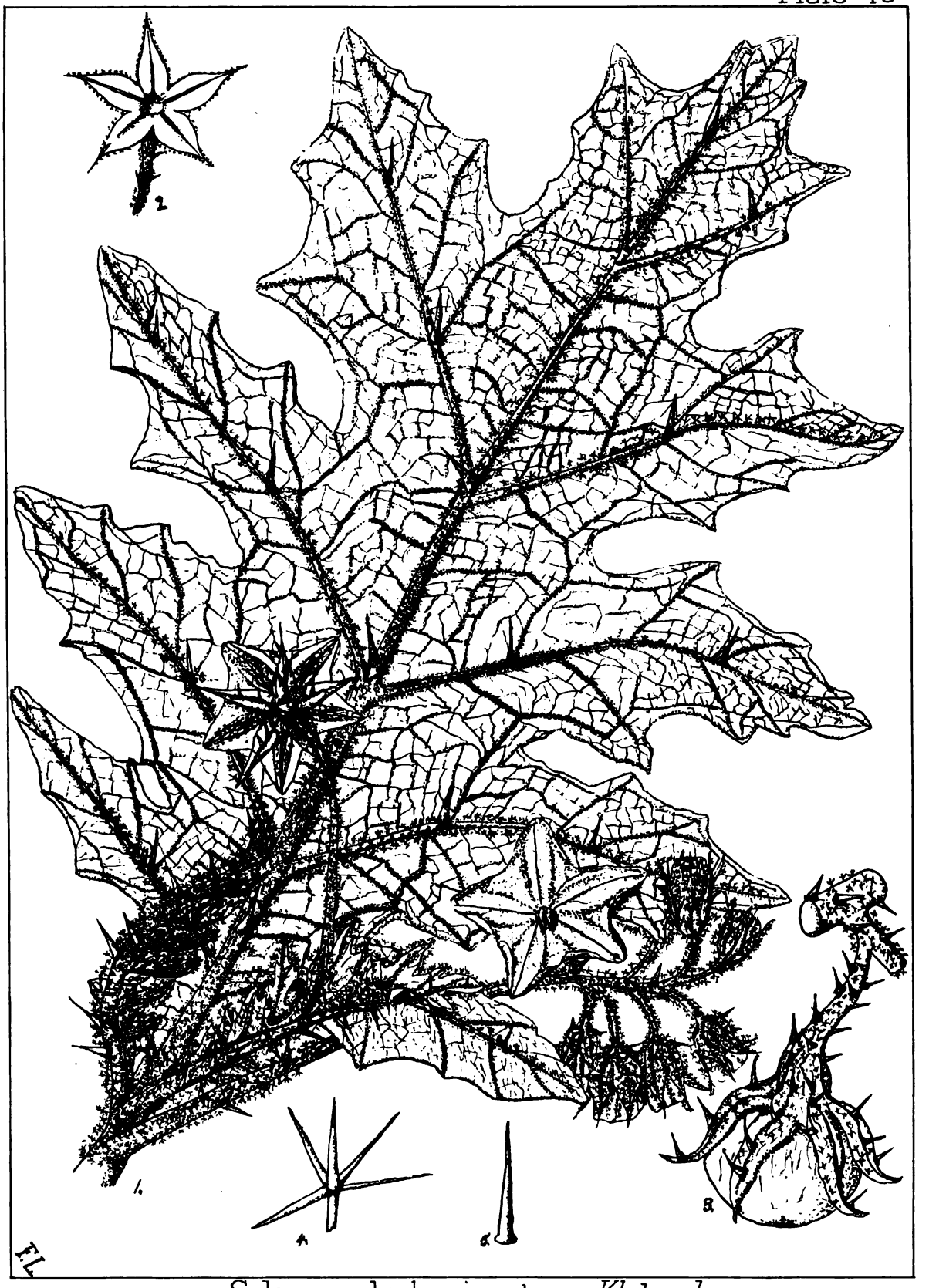
Clerodendron glabrum, *E.Meyer*.



Vangueria lasiantha, *Sond.*



Zizyphus mucronata *Willd.*



Solanum duplo-sinuatum, *Klotzsch*.

Jasminium streptopus *E.M.*

NATAL PLANTS.

DESCRIPTIONS AND FIGURES OF

NATAL INDIGENOUS PLANTS,

WITH NOTES ON THEIR

DISTRIBUTION, ECONOMIC VALUE, NATIVE NAMES,

&c., &c.

..BY..

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—AND—

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VOL. 1—PART 2.

CONTAINING FIFTY FIGURES AND DESCRIPTIONS.

BENNETT & DAVIS, PRINTERS, 345, WEST STREET, DURBAN.

1899.

PLATE 51.

CYRTANTHUS MACKENII. Hook, f.
Natural Order, AMARYLLIDEÆ.

Bulb ovoid, 1–1½ inches diameter, tunics brown, membranous. Leaves 2–6 contemporary with the flowers, linear, green, erect, 8–12 inches long, ¼–⅛ inch broad, peduncle longer than the leaves, sub-terete, slightly glaucous, hollow, red-brown towards the base. Flowers 4–10 in an umbel, pure white, pedicels slender, erect, ½–1 inch long, spathe valves 2, lanceolate, green, spotted with red-brown when young, but withering after the flowers open, and with several (varying from 4–6) small linear ones enclosed within them; 1–1½ inches long. Perianth sub-erect, 2 inches long; tube slightly curved, dilated gradually from base to a throat 2 lines in diameter; segments oblong, 3 lines long, 2 lines wide, spreading, the three outer ones cucullate at apex, 3 inner more or less emarginate. Stamens on throat of corolla, biseriate, included, free portion of filament very short, anthers linear-oblong, 1½ lines long. Ovary oblong, 1–2 lines diameter, triangular with rounded angles, 3 celled, many seeded; style exserted, stigmas 3, obtuse, minutely bristly at apex. Capsule trigonous.

Habitat: NATAL: Moist places from Isipingo to near Umzimkulu.

Drawn and described from specimens cultivated in the Botanic Gardens, Durban, flowering in July and August.

This plant is well known in cultivation, and increases rapidly, the flowers are pretty and faintly scented, and the sap is somewhat acrid, it is found in wet places in Coast districts, but so far as we are aware has not been noted North of Isipingo, nor far from the coast.

Fig. 1, Plant about natural size; 2, Flower, longitudinal section; 3, Corolla opened; 4, Ovary, style and stigma; 5, Stigmas; 6, Stamens, front and side view; 7, Section of ovary.

PLATE 52.

KALANCHOE THYRSIFLORA, Harv.
Natural Order, CRASSULACEÆ.

An erect herbaceous plant, more or less pulverulent with white powder. Stem robust, 2–4 feet high, terete or nearly so, nodes strongly marked with bases of fallen leaves. Leaves half amplexicaul, lowest obovate, middle and upper ones oblong or spathulate, obtuse, entire, fleshy, light green with pink margin, glabrous, lower ones 4–7 inches long, 3–5 inches wide. Inflorescence, either a short cyme, or a number of opposite cymes combined into a dense, oblong, many flowered panicle reaching to 9 or 12 inches long. Calyx 4 parted, almost to base, the lobes oblong-lanceolate, 1–2½ lines long, 1 line wide at base, bracts oblong, minute, pedicels 3–5 lines long. Corolla gamopetalous, urceolate, 5–8 lines long, 3 lines wide, lobes 4, ovate, obtuse, spreading, 3–5 lines wide when fully expanded, orange-yellow, tube green. Stamens 8, in two rows, adnate to corolla tube just below throat, the upper row opposite corolla lobes, lower alternate with them; anthers oblong, 2 celled. Squamæ 4, linear-oblong, bifid at apex, opposite the corolla lobes. Carpels 4, lanceolate, with subulate styles. Follicles 4, many seeded, seeds minute.

Habitat: NATAL: Inanda, *Wood* No. 549. Zwartkop, *Evans*.

Drawn and described from plants gathered on Little Zwartkop, July, 1898.

This species differs from the other members of the genus known to us in the inflorescence and the obtuse corolla lobes. It grows amongst rocks in sunny exposed situations. The white powder which covers the whole plant feels sticky and almost resinous to the touch. Flowers during the winter months. We cannot learn that the natives have any distinctive name for it, and so far as we can ascertain, it has no economic value, but it is not uncommon in cultivation in the Colony.

Fig. 1, Flowering stem, flowers and leaves; 2, Section of flower; 3, Corolla opened; 4, Stamen front and side view; 5, Ovaries showing squamæ; 6, Section of ovary; about natural size.

PLATE 53.

LEONOTIS LEONURUS, R. Br.
Natural Order LABIATÆ.

A many stemmed undershrub, reaching 4–6 feet in height. Stems quadrangular, with rounded angles, and a deep furrow on each side; densely tomentose. Leaves opposite, with smaller ones in the axils, narrowly oblong, acute at apex, tapering at base to a short petiole, entire in middle and lower portions, and with a few blunt teeth towards apex, finely pubescent above, more densely so beneath, finely ciliate, veins prominent beneath, and strongly marked on upper surface; 2–5 inches long, 2–8 lines wide.

Inflorescence in dense whorls at nodes in upper portion of the stem. Calyx tubular, narrowed at base, 10 toothed, 10 ribbed, oblique at apex, the ribs raised and green, the interspaces lighter coloured with transverse plainly marked veinlets, finely pubescent; 6–10 lines long, including pedicel; bracts many, linear, acute, ascending, curved, with a central vein, pubescent; inner flowers ebracteate. Corolla gamopetalous, irregular, 2 lipped, the upper lip very long and curved, conduplicate, widening a little to apex, lower lip 3 lobed, spreading, membranous, and soon withering, the middle lobe largest, or sub-equal, all acute; tube compressed, the upper portion and the whole of the upper lip densely villous with orange scarlet hairs; tubes $1\frac{1}{8}$–$1\frac{5}{8}$ inches long, 2 lines wide; upper lip $\frac{3}{4}$–1 inch long, lower lip 2–3 lines long; colour bright orange scarlet. Stamens 4, ascending in pairs under the upper lip of corolla, anthers 2 celled, cells divaricate. Style 1, longer than stamens, with a little notch below apex, scarcely lobed, apex acute. Fruit of 4 little nuts seated in base of calyx tube, and surrounded by a lobed cup-like disk; the apices of the nuts rounded and thickly studded with minute glands. Seeds triquetrous.

Habitat: NATAL: Edges of woods, thickets and similar situations all over the Colony.

Drawn and described from specimens gathered near Durban, July, 1898.

This plant is common all over the Colony, and produces its brightly coloured and conspicuous flowers in the autumn, continuing in flower almost or quite through the winter months. The genus contains about 12 species, 8 of which are South African, 3 being found in Natal. In Turkey it is known as the "Minaret flower" and in Cape Colony as "Wild Dagga." It appears to possess purgative properties, and is used in the form of a decoction as an emenagogue, and also in

chronic skin diseases. It is also reported to enter into the composition of a patent medicine which is sold in England. By the Hottentots it is smoked like tobacco, and by the natives in Natal it is used as a remedy for colds. The whole of the plant except the root is used in decoction as a tonic for calves, and is said to be very efficacious. The plant is boiled with water until the decoction is the colour of brown sherry, and the dose is 1 pint twice or thrice a week.

Dr. Andrew Smith says that it is used in the Cape Colony as a remedy for snake bites, he also says "The kafir name umfincafincane is taken from the sugar-birds sipping the sweets from the bottom of its long trumpet shaped corollas. Before the mouth of the corolla opens, which it does when the stamens are mature, the nectar is intensely bitter, but at the moment of opening the sweetness is developed. This means that nature does not wish insect marauders who cannot carry the pollen where it is required, to come and rob the nectary."

The plant is known to the Zulus as u-Munyani.

Fig. 1, Flowering stem with leaves and flowers, reduced; 2, Corolla opened; 3, Calyx opened showing ovaries and style; 4, Stamen; 5, Anther; 6, Apex of style and stigma, front and side view; 7, Nut showing glands; 8, Pollen grain; all enlarged.

PLATE 54.

LAPEYROUSIA CRUENTA, Baker.
Natural Order IRIDEÆ.

Corm ovoid, white, $\frac{1}{2}$–$\frac{3}{4}$ inch diameter, tunics finely reticulate, light brown, detachable as a matted covering. Stem below ground reaching to 4 inches long. Basal leaves 3–4, the upper ones only reaching above the surface of the ground; produced leaves 6–7, distichous, equitant at base, erect, linear and grass like, edge entire, apex acute, midvein prominent, lateral ones several on each side, two of which are more conspicuous than the others, and hyaline; 12–16 inches long, $\frac{1}{4}$–$\frac{1}{2}$ inch wide. Flowering stem a little shorter than the longest leaves, bearing 1–3 equitant depauperated leaves, sometimes branched in upper portion. Inflorescence a lax secund spike, spathe valves 2, opposite, ovate, acute, entire, faintly veined, 2–3 lines long. Perianth tube slender, straight, cylindrical, faintly many ribbed, widening a little to apex, tube $\frac{3}{4}$–$1\frac{1}{2}$ inches long; limb 6 lobed, lobes oblong, spreading, deep bright red or carmine, the three lower ones with each a rounded blotch at base, upper middle one a little larger than the others; spreading to 1 inch across. Stamens 3, exserted, about half as long as the perianth lobes, inserted just below throat, and then conspicuously decurrent along the tube, filaments red at apex, unilateral; anthers linear, 2 celled, arcuate, purple. Style slender, 3 lobed at apex, each lobe again deeply bifid. Ovary 3 celled, cells about 4 seeded, ovules slightly angular by pressure. Capsule trigonous with rounded lobes.

Habitat: NATAL: Coast districts, common, and reaching according to Mr. Buchanan to the neighbourhood of Fort Nottingham.

Drawn and described from specimens in flower on Berea, August, 1898.

This plant was formerly known as Anomatheca cruenta, but the genus Anomatheca has now been united with Lapeyrousia. It is very common in the coast districts, flowering in the early spring, say from July to September. The native name is unknown to us.

Fig. 1, Plant a little reduced; 2, Spathe valve; 3, Section of flower; 4, Anther, back view; 5, Anther, front view; 6, Stigmas; 7, Section of ovary; all variously enlarged.

PLATE 55.

OSTEOSPERMUM MONILIFERUM, Linn.
Natural Order COMPOSITÆ.

A much branched erect shrub, 3-10 feet high. Branches terete, light grey, glabrous, young ones green, shining and more or less covered with a deciduous white cobwebby tomentum. Leaves alternate, petiolate, exstipulate, varying from broadly obovate, or orbicular in lower leaves, to ovate or ovato-lanceolate in upper ones, margin coarsely serrate, or subentire, a little thickened and semi-transparent, the teeth usually, but not always sharp; apex obtuse with a recurved mucro, tapering at base to a flattened and winged petiole, texture thick, almost fleshy, midvein plainly visible, lateral ones indistinct; glossy and shining, but in the young state covered like the twigs with a white deciduous cobwebby tomentum, mature leaves including petiole 3–4 inches long, 2–3 inches wide, but in some specimens all are much smaller than this. Inflorescence in few flowered axillary and terminal corymbs, or sometimes solitary, the whole covered with tomentose hairs, peduncles 1–2½ inches long; pedicels 1–2 inches long. Heads many flowered, radiate, yellow, involucre of many lanceolate, acute scales, in two rows, the outer row shortest, thinly tomentose-pubescent; ray florets 7–10, female, ligulate, indistinctly 3 ribbed, 5–6 lines long; disk florets tubular, 5 lobed one third of the way down, tube pubescent, male, with abortive ovary and style. Pappus none. Receptacle convex, pitted. Achenes drupaceous, ovate, green, glabrous, black when ripe, 3–4 lines long, 2 lines wide.

Habitat: NATAL: Edges of woods, and similar situations from Coast to Drakensberg.

Drawn and described from specimens gathered near Durban, August, 1898.

The genus Osteospermum is an exclusively South African one, and includes about 50 species, of which 9 or 10 are natives of Natal, the one here described is the largest, and perhaps the most common one, the remainder being all herbaceous. It is in flower, on the coast at any rate, almost or quite all the year round. The achenes are almost black when ripe, and the succulent or pulpy outside covering is eaten by natives and children. The generic name Osteospermum means bone-seed and we know of no other genus of Compositæ in Natal whose achenes are of this character. The native name of the plant is Etolonja.

Fig. 1, Twig with leaves and flowers about natural size; 2, Involucre; 3, Disk floret; 4, Ray floret; 5, Style and stigmas; all enlarged.

PLATE 56.

GERBERA KRAUSSII, Sch Bip.
Natural Order COMPOSITÆ.

Perennial, herbaceous, stemless. Root fibrous. Leaves radical, petiolate, ovate-oblong, acute or obtuse at apex, tapering or rounded to base, edge finely and distantly denticulate, veins prominent beneath, especially the midvein; hirsute above, in age sub-glabrous, thickly clothed beneath with a dense white felted

tomentum; 2½–4 inches long, 1¼–1¾ inches wide; petiole channelled above, pilose with long white silky hairs; 1–2½ inches long. Peduncles usually one, but sometimes more to each plant, terete, tomentose, and with numerous pilose hairs; 6–15 inches long, 1 headed. Heads many flowered, radiate, rays in two rows, female. Corolla of outer ray florets strap shaped, elongate, with a small filiform bifid inner lobe at base, which is coloured purple, the large strap shaped lobe being white above, pink or coppery beneath, inner row subtubular, short, 2 lobed, outer lobe 3 fid, inner 2 lobed, purple, disk florets similar, perfect. Involucral scales numerous, in 2 rows, lanceolate-acuminate, densely rusty tomentose. Pappus copious, rough, violet purple. Achenes hispid.

Habitat: Natal: On grassy lands all over the Colony.

Drawn and described from specimens gathered near Durban, August, 1898.

The genus Gerbera contains about 40 species, of which 18 or 19 are natives of South Africa, 6 being found in Natal. The species here described is a rather variable one, and may be distinguished from all the other Natal species by its white ray florets, with purple or violet pappus. The well known "Barberton Daisy" (*Gerbera Jamesoni*) which is named in honour of our fellow-townsman Hon. R. Jameson, M.L.C., belongs to this genus, and we have in the Colony one species (*G. Aurantiaca*) whose flowers are a similar colour.

The native name of G. Kraussii is Cabazaan.

Fig. 1, Plant about natural size; 2, Outer ray floret; 3, Base of same, showing inner lobe; 4, Inner ray floret; 5, Disk floret; 6, Pappus bristle; all enlarged.

PLATE 57.

OTHONNA CARNOSA, LESS, var discoidea.
Natural Order COMPOSITÆ.

A low growing glaucous, branching, fleshy, undershrub with prostrate rooting stems. Stems terete, green, glabrous, prostrate or ascending, branches suberect, leafy only in lowest half. Leaves scattered, sessile, concave in lower third, channelled in central portion, quite terete in upper third, light green, glabrous, glaucous, usually erect, but lower ones often drooping, 1¼–6 inches long, 2–2½ lines wide at base, tapering gradually to an acute apex. Peduncles erect, with or without 1–3 depauperated leaves in lower portion. Inflorescence cymose, cymes 4–14 headed. Heads many flowered, discoid, sub-hemispherical. Involucral scales 6–8, oblong, acute, at first concrete, afterwards separating nearly to base, valvate. Outer florets tubular, 5 fid, perfect, in one row, their styles bi-fid. Disk florets tubular, 5 toothed, male, their styles undivided, abortive. Anthers membrane tipped. Pappus bristles rough. Achenes of ray obliquely oblong, microscopically glandular, of disk glabrous.

Habitat: NATAL: Sandy soil near the sea. Wood No. 1309.

Drawn and described from specimens gathered near Durban, August, 1898.

The genus Othonna includes about 80 species, all natives of South Africa, 6 of which are found in Natal. The plant here described is a variety of one found in Cape Colony, but our plant differs from the type mainly by the absence of elongated ray florets, the head being thus discoid, not radiate. In consequence of its succulent character, it is very difficult to dry, so as to secure good specimens,

which perhaps accounts for its having been so long undescribed, since it is not uncommon near Durban. It was first described and figured from Wood's specimens in the Icones Plantarum Plate 1713.

When bruised the whole plant has a somewhat unpleasant scent.

Fig. 1, Plant about natural size; 2, Involucral scale; 3, Pappus bristle; 4, Outer floret; 5, Style of same; 6, Disk floret; 7, Style of same; 8, Staminal tube opened; 9, Ray achene; all enlarged.

PLATE 58.

HÆMANTHUS NATALENSIS, Pappe.
Natural Order AMARYLLIDEÆ.

A bulbous plant, flowering in the early spring. Bulb globose, oblique, 2–3 inches in diameter; scale leaves about 4, roundish to ovate, pale green, tipped and spotted with red brown. Leafy stems spotted with red brown, 1–2 feet long; leaves 8 or more, oblong, membranous, bright green, 1–2 feet long, narrowed to a sheathing petiole, the lower tipped and spotted on the back, with red brown. Peduncles produced from the axil of one of the scale leaves, compressed, sulcate; 1-2 feet long, $\frac{3}{4}$-$1\frac{3}{4}$ inches thick, spotted especially near the base. Umbel very densely many flowered, globose, 3-5 inches in diameter; pedicels 1-2 inches long, each flower subtended by a linear bracteole; spathe valves 5-8, broadly ovate to linear-oblong, obtuse, reddish brown, imbricated, at first ascending, afterwards spreading at right angles from the stem; $1\frac{1}{4}$-4 inches long, $\frac{1}{2}$-4 inches wide. Perianth 1 inch or more long, pink, segments linear, more than twice as long as the cylindrical tube, thickened and recurved at apex, the alternate ones with a minute tuft of hairs under the tip, which is greenish white. Filaments 1 inch or more long, pink; anthers yellow; style longer than the stamens, pink; stigma minute, obtuse. Berry sub-globose, 3 lines in diameter, 1-3 seeded, red when ripe.

Habitat: NATAL: Common on the coast in open ground flowering in early spring, in the midlands occasionally found in forests.

Drawn and described from specimens gathered near Durban, August, 1898.

The genus Hæmanthus or "Blood Flower" includes some 45 species, all but 3 of which are natives of Tropical and South Africa, and 11 or 12 of them are found in Natal, from sea level to the ridge of the Drakensberg at 6,000 feet altitude. The species above described has the reputation of being poisonous, but is used medicinally by the natives, who know it as Idumbe-ka-Hloile. The flowers are usually precocious, but the leaves often attain nearly their full size before the flowers are withered.

Fig. 1, Leaf and head of flowers about natural size; 2, Flower, showing bracteole; 3, Section of base of flower and ovary; 4, Stamen and lobe of corolla, side view; 5, Apex of corolla lobe, showing tuft of hairs; all enlarged.

PLATE 59.

NUXIA FLORIBUNDA, Bentham.
Natural Order LOGANIACEÆ.

A tree reaching to 40 or 50 feet in height, with a trunk 1-2 feet in diameter. Twigs light brown, terete, glabrous. Leaves in whorls of 3, petiolate, exstipulate,

narrowly oblong, acute at apex, tapering to base, margin undulate, distantly and obscurely indented, glabrous, 3-7 inches long, 1-2 inches wide; petiole 1-2 inches long, pulverulent, channelled in upper portion. Inflorescence paniculate, the panicles divaricately much branched. Calyx tubular, 4 fid, teeth erect, acute or obtuse, 1½ lines long, ¾ line wide. Corolla gamopetalous, tube cylindrical, 1 line long, ¾ line wide, limb 4 lobed, lobes oblong, acute, half as long as tube, reflexed, slitting transversely just above the ovary, and soon falling off, the tube included within the calyx, lobes only exserted; with a tuft of white hairs just below insertion of stamens. Stamens 4, on throat of corolla, alternate with its lobes, filaments longer than corolla, a little swollen at base, and with a tuft of white hairs above the point of junction; anthers ovate, 2 celled, at length confluent. Ovary superior, 2 celled, many seeded; style shorter than stamens, simple, obtuse. Capsule enclosed within the persistent calyx, laterally compressed, 2 lobed, 2 valved at apex. Seeds minute.

Habitat: NATAL: Coast to midlands. Wood No. 980.

Drawn and described from a specimen in the Natal Botanic Gardens, the young tree having been brought from Noodsberg.

This is a handsome tree, the young twigs, petioles, and midribs of the young foliage being of a purplish tint; the leaves are always verticillate, but in the older specimens this is not so perceptible.

Mr. Fourcade says of it, "Wood hard, heavy, close grained and compact * * * * light yellow, tinged with pink; used for felloes, and schamels of wagons."

The genus Nuxia contains about 10 described species, natives of Tropical and South Africa, and the Mascarene Islands, 3 at least of which are found in Natal, and there are probably one or two species in the Colony which are not yet described. The native name is unknown to us, and the tree flowers in July and August.

Fig. 1, Branch with leaves and flowers; 2, Flower; 3, Plan of Flower; 4, Corolla opened; 5, Calyx, corolla removed; 6, Section of calyx showing ovary and style; 7. Corolla lobe and stamen; 8, Stamen, side view; 9, Section of ovary; 10, Fruit; 11, Anther, side view; 12, Anther, front view; all enlarged.

PLATE 60.

BUDDLEIA PULCHELLA, N. E. Brown.
Natural Order LOGANIACEÆ.

A rambling divaricately branching shrub. Branches opposite, terete, light brown, glabrous, young ones green, puberulent, young shoots densely white tomentose. Leaves opposite, petiolate, varying in shape from lanceolate or ovato-lanceolate to hastate, or with two rounded lobes on each side, occasionally with three lobes on one or both sides, glabrous above, very finely pubescent beneath, the young ones densely white tomentose beneath, green and stellate pubescent above; obtuse or sub-acute at apex, tapering at base to a channelled petiole; mature leaves reaching to 3-4 inches long, including petiole; 1¾-2 inches wide. Inflorescence in axillary and terminal loosely flowered panicles, the primary divisions of which are opposite, cymose and divaricately branching. In the young state the whole inflorescence is white flocculosely stellate pubescent, the calyx and

pedicels always so. Calyx tubular, cylindrical, 4 toothed at apex, teeth obtuse, the whole calyx with pedicel 2½ lines long; bracts linear-subulate, caducous, longer than pedicels; pedicels very short. Corolla gamopetalous, the tube cylindrical, straight, very slender, exserted, 3-4 lines long, reddish, lobes 4, oblong obtuse, spreading, each 1 line long, dull white, throat orange red. Stamens 4, sessile on tube one third down from throat, alternate with lobes; anthers small, 2 celled; Style a little longer than calyx, obtuse. Ovary superior, seated on a cup-like disk, 2 celled, many seeded.

Habitat: NATAL: Edge of wood near York at 3-4,000 feet altitude.

Drawn and described from a plant brought by Mr. Wood from near York in 1892 or 1893.

This plant was first described by Mr. N. E. Brown in the Kew Bulletin for 1894, p. 389, and he says of it "A very distinct species unlike any other in the genus, most of the leaves are hastate, some have two lobes on each side, and a few are either rhomboidal or lanceolate. Described from a living plant cultivated at Kew, that was received in May, 1894, from the Durban Botanic Gardens, Natal, without information as to locality."

The plant sent to Kew was reared from the one from which our figure is taken, but we do not find that most of the leaves are hastate, though many of them are so, and the uppermost ones are usually lanceolate, or ovate-lanceolate as shown in the drawing. The genus Buddleia contains about 70 species inhabiting tropical and sub-tropical Asia and America, and South Africa. In Natal we have now 3 known species, none of which have any economic value. The plant described above is somewhat unpleasantly scented when in flower, and comes near to Wood's No. 574 gathered at Inanda in June 1879, if it be not identical with it. It flowers in July and August.

Fig. 1, Branch a little reduced; 2, Flower; 3, Corolla opened; 4, ovary and style; all enlarged.

PLANT 61.

ONCINOTIS INANDENSIS, Wood & Evans, n. sp.
Natural Order APOCYNEAE.

Stems wide climbing, terete, branching, bark dark coloured; twigs finely pubescent, older almost glabrous, branches opposite, swollen at base, and usually joined by a hard woody ring, naked and bare below, leafy above. Leaves opposite, petiolate, exstipulate, but joined by an interpetiolar ring, broadly ob-lanceolate, obliquely acuminate at apex, tapering to the petiole at base, veins and veinlets prominent beneath, and plainly visible above, edge quite entire, glabrous; 2½-4 inches long, ¾-1½ inches wide. Petiole 2-3 lines long, curved, dark green and swollen at base. Inflorescence in few flowered axillary racemes, which are occasionally branched, and much shorter than the leaves. Bracts very small, rusty pubescent, deciduous, proceeding from a ring or sheath at base of calyx. Calyx 5 cleft nearly to base, tube turbinate, lobes deltoid, obtuse, erect, finely rusty pubescent, 1½ lines long. Disk 5 lobed. Corolla salver shaped, 5 lobed, lobes linear-lanceolate, reflexed, a little longer than the tube, with 5 deltoid acuminate scales in throat, alternate with the lobes, and one sixth their length, exserted, tube barrel shaped, finely pubescent on outer surface, and with white pilose hairs

within; twisted to the left in æstivation. Stamens 5, at base of corolla tube, filaments very short, expanded, and pilose with white hairs at base, anthers linear, sagittate, acuminate at apex, 2 celled, introrse, conniving and adhering to the stigma near the middle, style short, stigma thickened, elongate, divided at the apex into two short acute lobes. Carpels 2, many ovuled. Follicles 2, divergent, or parallel, cylindrical, acute, 6-8 inches long, glabrous, seeds linear oblong, minutely warted, brown, comose at apex, with numerous white hairs, which are 1½ times as long as the seed.

Habitat: NATAL: In woods, Inanda. Wood No. 1009.

Drawn and described from specimens kindly gathered at Inanda, by Mr. W. Groom.

The genus contains according to the Index Kewensis 3 species, two of which are natives of Central Africa, the other one of Madagascar; since publication of that work another species, O. gracilis, Stapf, a native of Lagos, has been described in the Kew Bulletin for 1894, and figured in the Icones Plantarum, t 2346.

The plant above described has so far as known to us, only been observed in the Inanda district, and is there rather rare, it is a strong woody climber reaching to the tops of the trees and spreading over them, the stems are naked and bare below, becoming leafy and branching above, the ultimate branches are from 3 to 18 inches long, flexuous and leafy. The flowers are numerous, greenish white, and sweetly scented. The natives do not seem to have any specific name for it, but call it Zonga-Zonga, which simply means a strong climber, and they do not put it to any use. It is in flower about September.

Fig. 1, Twig with leaves, reduced, a single leaf with flowers, and a follicle about natural size; 2, Calyx; 3, Corolla opened; 4, Stamen back view; 5, Stamen, front view; 6, Style showing protuberances to which the anthers are attached; all enlarged.

PLATE 62.

CALLILEPIS LAUREOLA, D.C.
Natural Order, COMPOSITAE.

A small undershrub, usually glabrous, but sometimes more or less pubescent. Stems many, occasionally simple, but more commonly much branched, terete, striate, 1-2 feet high. Leaves, lower ones opposite, upper alternate, sessile, broadly lanceolate, or narrow oblong, acute at apex, obtuse at base, margin entire, or minutely denticulate, and occasionally with a few pilose hairs, 3 veined, 1-2 inches long, 3 lines to ½ inch wide. Heads radiate, terminal, many flowered, heterogamous, rays female, disk perfect; 1¼-1¾ inches diameter. Involucre campanulate, the scales imbricated in several rows, lanceolate, sub-equal, 3-4 lines long. Receptacle conical, covered with infolded acuminate, scarious paleæ, which are finally serrate at back, each enclosing a floret, tipped with purple. Ray florets 15-25, crowded, unilabiate, the lip emarginate, entire, or obscurely lobed at apex, 5 lines long, disk florets tubular, 5 toothed, numerous. Pappus of 2-3 scarious, acuminate, keeled scales. Style arms of ray florets obtuse, of disk florets cone tipped. Achenes smooth, glabrous, with a marginal entire wing.

Habitat: NATAL: On grassy hills in most parts of the Colony.

Drawn and described from specimens gathered near Durban, September, 1898.

This plant is a most conspicuous one in the summer months, its large flower heads with white rays and dark purple disk mark it as a plant well worthy of cultivation.

The genus Callilepis contains 5 species, all of which are South African, the one above described being the only one found in Natal, though C. leptophylla, Harv which is nearly related to it has been found in Transvaal, and probably exists in the upper parts of Natal, the difference between the two species being chiefly in size of flower heads, and size, shape and venation of leaves. The natives know the plant as "im-Pila" and they use the roots ground to a paste for killing maggots in cattle, and the leaves they occasionally mix with other ingredients to form their scent balls.

Fig. 1, Flowering stems a little reduced; 2, Ray floret; 3, style of same; 4, Disk floret; 5, Style of same; 6, Disk floret showing palea; all enlarged.

PLATE 63.

CRASSULA NATALENSIS, Schönland.
Natural Order, CRASSULACEAE.

Sub-herbaceous, erect, branched. Stems 18-24 inches in height, terete, branched in upper portion. Leaves opposite, sessile, sub-connate; lower ones ovate; 1½-2 inches long, ½-¾ inch wide, upper ones ovato-lanceolate, gradually becoming smaller upwards; all entire, glabrous, cartilagineo-ciliate. Inflorescence a loosely many flowered corymb, the flowers small, varying in colour from white to pink. Calyx 5 parted nearly to base, lobes narrow oblong, acute, half as long as corolla. Corolla gamopetalous, 5 lobed, lobes narrow oblong, or obovate, obtuse, 1½-2 lines long. Stamens 10, a little shorter than corolla lobes; anthers 2 celled. Carpels 5, lanceolate, many seeded; styles short, stigmas truncate; sqamæ cuneate, yellow, minute.

Habitat: NATAL: Amawaqua Mountain at 6-7,000 feet above sea level Wood 4637; April, Flowers pink; Near Greytown, 4-5,000 feet above sea level, flowers white; Near Karkloof, Wood 4484, April; Illovo, Wood 1876, April; Fort Nottingham, J. Wylie (Wood 6765), March.

Drawn and described from the specimens gathered near Fort Nottingham by J. Wylie.

This is a species described by Dr. Schönland, of Grahamstown, in Bulletin de l'Herbier Boissier, Vol. 5, No. 10, 1897, from specimens sent from the Colonial Herbarium.

It is said by the author of the species to come near to C. vaginata, E. & Z., but in outward appearance it is very different from the common forms of that plant; the flowers appear to vary in colour from pink to almost white.

Fig. 1, Flowering stem about natural size; 2, Flower; 3, Corolla opened, showing stamens; 4, Stamen; 5, Carpels, and squamæ; all enlarged.

PLATE 64.

OTHONNA NATALENSIS, Sch. Bip.
Natural Order, COMPOSITAE.

Herbaceous, glabrous and glaucous. Root tuberous, prolonged into a half

woody rootstock, the upper portion of which is woolly with matted hairs. Leaves several on each crown, rosulate, erect, coriaceous, oblong-lanceolate, or lanceolate, acute or obtuse, entire, or with 2-4 acute, or sometimes obtuse lobes on each side of uppermost portion of leaf; much attenuated to base, axils woolly, midrib broad and prominent, veinlets obscure; light green and glaucous, reddish purple at base, and in midrib a little upwards from the base; 4-6 inches or more long, 1½-2 inches wide. Peduncle scape-like, terete, finely striate, glaucous like the leaves, nude except for one or two small bract-like leaves at base of inflorescence, and smaller ones on pedicels, occasionally branched, each branch bearing 1-3 flower heads, 6-15 inches long; pedicels terete, 1-2 inches long. Heads radiate, 1½-2 inches in diameter, yellow, involucral scales 8-10, oblong-lanceolate, uniseriate, concrete at base, free above, valvate; ray florets 8, in one row, broadly ligulate, female; 3-4-toothed at apex, pappus copious, bristle shaped, fulvous, in many rows, disk florets numerous, slender, tubular, their corollas 5 toothed, their styles simple, tipped with a hispid cone; pappus serrate, uniseriate, white. Achenes oval, pubescent.

Habitat: NATAL: In open ground all over the Colony, also in Kaffraria.

Drawn and described from specimens gathered at Clairmont, September, 1898.

In the coast districts this is one of the earliest flowers to make its appearance in the spring, and it is often found in flower until late in the summer. Its large yellow flower heads are very conspicuous, and the whole plant resembles Senecio coronatus, D.C., but its crown is less woolly, stem leaves are almost or quite absent, and involucre in one, not several rows.

Mr. Nicholson of Beaulieu informs us that the leaves are eaten by stock, and are also given to calves to make them fat, they are eaten also by the natives when food is scarce, and he thinks that if cultivated they would make a good salad or vegetable, but this is not confirmed by our experience.

Fig. 1, Plant about natural size; 2, Ray floret; 3, Style of ray floret; 4, Disk floret; 5, Style of disk floret; 6, Pappus bristle; 7, Achene; all enlarged.

PLATE 65.

ANDROCYMBIUM NATALENSE, Baker.
Natural Order, LILIACEAE.

A small herb. Corm small, globose; underground neck 2-3 inches long, 1-1½ lines diameter, with a membranous sheath. Stem none. Leaves 2-3, lanceolate from a broad equitant base, distichous, 2 inches to 1 foot long, glabrous and shining, mucronate, margin entire, hyaline, midvein distinct, lateral veinlets obscure. Heads few flowered, pedicels short; bracts 1-2, similar to the leaves in shape, but much shorter, and very pale green, the veins and veinlets light purple beneath, visible above. Perianth 6 parted, ¾ inch long, lamina as long as claw, each lobe enclosing a stamen, the slender claw forming a distinct tube, then suddenly dilated, and widening to a recurved lamina which is pinky white, with lavender coloured veins, which are deeper in colour towards the obtuse apex. Stamens 6, inserted at the apex of the claw of the perianth segments, filaments subulate, anthers oblong, 2 celled. Ovary 3 celled, elongated, 3 lobed, lobes rounded, cells many seeded, seeds superposed, styles 3, subulate, stigmas minute.

Habitat: NATAL: Inanda, Wood No. 200; Tongaat Miss Rich (Wood, No. 5764) July.

Drawn and described from plants in flower in the Natal Botanic Garden, September, 1898, the plants having been originally brought from near the Tongaat River.

This genus contains 17 species, of which 14 are South African, 1 from Palestine, 1 from Abyssinia, and one from North Africa; besides the one above described only one other is found in Natal. A. natalense was first described by Mr. Baker in the Flora capensis, Vol. VI., Page 519, and the perianth is there said to be greenish, and in Wood's No 200 it is so, but in the specimens gathered by Miss Rich they are as described in the text. Plants of it have flowered in the Botanic Gardens for the last two years, and the same colour has been mantained. In Wood's No. 200 the plant is usually a little larger than the Tongaat specimens, but there does not appear to be any other difference between them. The natives do not seem to have any distinctive name for it, nor is it applied to any useful purpose so far as we are aware.

Fig. 1, Plant about natural size; 2, Flower; 3, Perianth lobe with enclosed stamen; 4, Stamen; 5, Ovary; 6, Section of ovary; all variously enlarged.

PLATE 66.

CLAUSENA INOEQUALIS, Benth.
Natural Order RUTACEÆ.

A shrub or small tree with dark coloured bark, which is usually thickly studded with lenticels. Leaves unequally pinnate, 6–8 inches long, leaflets alternate or subopposite, in 4–6 pairs, petiolulate, glabrous, lateral ones very unequal sided, the lower portion of the lamina being much smaller than the upper portion, terminal one subequal; broadly lanceolate, margin unequally crenate, attenuate to an obtuse or sub-acute apex; 1½–2 inches long; ½–¾ inch broad, petiolules 2–3 lines long, pubescent, terminal one 6–9 lines long, swollen and bent below the lamina. Flowers paniculate, white; Calyx small, 4 parted, sepals lanceolate, pubescent. Petals 4, concave, free, spreading, imbricate in bud, deciduous. Stamens 8, hypogynous, filaments free, subulate, flattened. Anthers sagittate. Ovary on a short cylindrical fleshy torus, obtusely 3 lobed, 3 celled, ovules 2 in each cell, collateral. Style short, thick, deciduous. Stigma 3 lobed. Berry fleshy, dark purple, the epicarp thickly studded with minute glands; 1–2 seeded by abortion.

Habitat: NATAL: Coast and midlands, common.

Drawn and described from specimens gathered near Durban, September, 1898.

A shrub or small tree called by the natives um-Sanga, or um-Nugambili, and used by them medicinally. In the Flora Capensis this plant is called Myaris inœqualis, Presl, the generic name being an anagram of Amyris, a genus of Burseraceæ, this genus is now abolished, and this, the only species, is now included in Clausena, the only difference between the two genera being that in one the ovules are superposed, in the other collateral. C. inœqualis is also found in the Cape Colony and extends to Central Africa. According to the Index Kewensis the genus includes about 14 species, the greater portion of which are natives of India, and at least one of them has there a high repuation as a medicinal plant. The flowers are sweetly scented, and the leaves when bruised have a somewhat unpleasant odour.

Fig. 1, Branch with leaves and flowers, about natural size; 2, Flower; 3, Flower with some of the stamens removed; 4, Calyx, ovary and style; 5, Stamens, front and side view; 6, Section of ovary; all enlarged.

PLATE 67.

HEBENSTRETIA COMOSA, Hochst.
Natural Order SELAGINEÆ.

An undershrub, perennial from a swollen woody root. Stems several, erect, terete, glabrous, 12 to 18 inches or more high. Leaves scattered, sessile, linear-oblong, glabrous, tapering gradually to base, acute at apex, margin unequally and sharply serrate, teeth and apex of leaves a little thickened, midvein conspicuous, lateral ones obscure; 1–2 inches long, becoming smaller upwards, 2-4 lines wide. Inflorescence spicate, spikes densely flowered, lengthening with age. Calyx cleft to base in front, oblong, entire, membranous, 2½–3 lines long; bracts lanceolate-acuminate, concave, 4–5 lines long. Corolla deeply cleft in front, 1 lipped, 4 lobed, lobes rounded, sub-equal, or 2 outer larger; white with a large oblong deep red blotch in centre below base of lobes. Stamens 4, didynamous, inserted on margin of lip, shorter than lobes; anthers 1 celled, filaments thickened at apex; style filiform, stigma entire. Carpels 2, sub-equal, at length separating, each 1 seeded, the back one often, but not always abortive.

Habitat: NATAL: Coast and Midland districts, common. Flowering on the coast all the spring and summer. Wood No. 68.

Drawn and described from specimens gathered near Durban, September, 1898.

The genus Hebenstretia is an exclusively African one, and includes 18 species the whole of which are found in South Africa, one only reaching also to Abyssinia. Some of the species are very handsome, and have been introduced into cultivation in Europe.

Fig. 1, Plant about natural size; 2, Calyx opened; 3, Corolla opened showing attachment of stamens; 4, Ovary enclosed in calyx; 5, Section of ovary; all enlarged.

PLATE 68.

ARISTEA ECKLONI, Baker.
Natural Order, IRIDEÆ.

An erect herbaceous plant with bright blue flowers. Rootstock, short, thick, oblique, with slender wiry fibres. Leaves chiefly distichous, basal, linear, straight, quite entire, with narrow translucent margins, dark green, glabrous, with many indistinct parallel veins, acute at apex, equitant and coloured deep red at base, 6–18 inches long. Flowering stems strongly ancipitous for their whole length, bearing several erect branches, each branch subtended at base by a single, leafy, acute, semi-amplexicaul bract, the lowest much the largest, the uppermost small, soon withering. Flowers in clusters of 2–4 on the branches, and on stems at base of branches, each cluster with 1–2 membranous, acute, entire, brown bracts at base, each flower with 1–2 similar, but smaller ones at base of the short pedicel. Perianth rotate, with a very short tube, and 6 spreading lobes in 2 rows, the outer row of 3, oblong, strongly veined, and ridged with green in centre beneath, bright blue above; inner row of 3, ovate, bright blue on both sides, all emarginate;

5–6 lines long, outer ones 2 lines wide, inner 3–4½ lines wide. Stamens 3, exserted, inserted on perianth tube; filaments filiform, purple, anthers linear-oblong, 2 celled, sub-sagittate, attached at sinus, style equalling stamens, stigma indistinctly 3 lobed. Ovary inferior, oblong, triangular with acute angles, 3 celled, many ovuled, ovules superposed; capsule dry, distinctly pedicelled.

Habitat: NATAL: Inanda, Wood No. 192; all over the Colony, usually, but not always in moist or shady places.

Drawn and described from specimens gathered near Durban, September, 1898.

The genus Aristea is represented in South Africa according to the Flora Capensis by 21 species, there are 4 in Tropical Africa, and several in Madagascar. All have bright blue flowers, and two or three of the species are in cultivation in England.

Fig. 1, Plant about natural size; 2, Flower; 3, Section of flower showing two stamens, style stigma and upper portion of ovary; 4, Cross section of ovary; 5, Section of flowering stem; all enlarged.

PLATE 69.

RHUS LONGIFOLIA, Sonder.
Natural Order, ANACARDIACEÆ.

A spreading tree, 30 to 40 feet in height, with trunk 2 to 3 feet in diameter. Leaves scattered, chiefly at ends of the branches, petiolate, exstipulate, simple, entire, coriaceous, glabrous, linear-oblong, obtuse at base, apex obtuse or emarginate, strongly recurved; margin thickened, hyaline, undulate; midvein prominent beneath, veinlets conspicuous; dark green and shining above, lighter and dull beneath, 3–6 inches long, ⅞–1½ inches wide; petiole ¾–1¼ inches long, channelled above, springing from an annular protuberance, which is persistent on the twigs and branchlets. Inflorescence in large terminal, much branched, many flowered panicles. Calyx gamosepalous, externally canescent, 5 cleft, teeth obtuse. Corolla 5 parted nearly to base, lobes oblong, obtuse, more than twice as long as calyx, light yellow-green, sometimes with a rosy tint, externally a little canescent. Disk annular, yellow. Stamens in male flowers 5, shorter than corolla, and inserted with it outside the disk, anthers 2 celled, dorsifixed. Style and ovary abortive. Female flowers, calyx and corolla similar to the male. Stamens 5, abortive. Styles 3, thick, sub-connate at base, recurved at apex. Stigmas obtuse and dark coloured. Ovary seated on the disk, 1 celled, 1 seeded. Drupe oblique, or reniform, compressed, glabrous, purple, the seed pendent from the wall of the cell near its apex, the seed cord being adherent to the cell wall for more than half its length.

Habitat: NATAL: In forests all over the Colony.

Drawn and described from specimens gathered near Durban, September, 1898.

Mr. Fourcade in his Report on Natal Forests, p. 104, says of this tree, "A large tree 2–3 feet in diameter, 40-50 feet high. Bark reddish grey, thin, even, or cracked. Wood moderately heavy and hard, moderately strong and elastic, compact, satiny, medullary rays moderately fine, close; pores small, regularly distributed; colour purplish or grey tinged with red, the heartwood dark; used for beams, planks, rafters, &c.; not very durable in water, or in contact with the ground. Milky juice from the bark used by the natives as a depilatory.

The bark analysed by Mr. Stephen for the Colonial and Indian Exhibition gave 18% of leather forming material, or 7.20% of tannin; or dried at 110 centigrade gave 7.48% of tannin.

The tree is known to the natives as isi-Fuca, and they use the gum which exudes from the bark for fixing the blades of the assegai into its handle, as a depilatory they simply smear their fingers with the gum so as to enable them to take a firm hold of the hairs, which they then pluck out by the roots.

Fig. 1, Twig with leaves and flowers, natural size; 2, Male flower; 3, Female flower; 4, Female flower with calyx and corolla removed; 5, Cross section of fruit; all enlarged.

PLATE 70.

ORNITHOGALUM VIRENS, Lindl.
Natural Order, LILIACEÆ.

Bulb globose, ¾–1½ inches in diameter, very light in colour, with numerous fibrous roots, and several small flattened bulbils at base, springing from amongst the tuft of fibrous roots, in the young state adherent by their inner faces to the parent bulb, afterwards being forced away to varying distances from it, thus becoming stoloniferous. Leaves 3–6, erect, linear-acuminate, glabrous, dark green, concave in lower portion, veins fine and rather prominent, numerous; 1–1¼ inches broad at base, tapering to a fine point; 12 to 18 inches long. Peduncle slender, terete, equalling or longer than the leaves; raceme at apex of peduncle, many flowered; at first short, afterwards lengthening to 3 to 4 inches when in fruit; pedicels ascending, finally 2–4 lines long, upper ones shorter; bracts linear-subulate, equalling the pedicels of the mature flowers, usually, but not always projecting beyond the young buds at apex of raceme. Perianth 6 parted to base, the segments in two rows, spreading widely, each segment 3–4 lines long, 1½–2 lines wide, the inner ones widest, oblong, minutely cucullate at apex; greenish white with broad green central band. Stamens 6, nearly as long as the perianth lobes. Filaments lanceolate, the three opposite the outer perianth lobes much broader, and oblong in lower two-thirds, then abruptly narrowed to an acuminate apex. Anthers 2 celled, versatile. Ovary trigonous with rounded angles, 3 celled, many seeded. Capsule membranous, loculicidally 3 valved, broadly ovate-trigonous with rounded angles. Seeds compressed, 3 ribbed or winged, black.

Habitat: NATAL: Common in coast and midland districts, flowering in spring and summer.

Drawn and described from specimens gathered near Durban, September, 1898.

The genus Ornithogalum contains about 100 species "widely spread in the old world," of these, according to the volume of the Flora Capensis lately published, 73 are natives of South Africa, 11 of which have been found in Natal; the species here described has, we think, been hitherto confused with O. Eckloni, but it differs in the following particulars, the bracts are not lanceolate-setaceous, but linear-subulate, and in the young inflorescence do not protrude much beyond the buds, while in O. Eckloni they do so conspicuously; the filaments are not lanceolate and sub-equal, but the alternate ones are much broader than the others and almost quadrate at the base, and lastly the flowers are certainly not pure white, but distinctly greenish white as stated in the text, each segment having a broad central

green stripe. We notice further that while in O. virens the bulbils are few and produced as above stated, in O. Eckloni, they are very numerous, thickly clustered, different in shape, and scarcely stoloniferous.

Fig. 1, Plant about natural size; 2, Flower, two lobes of perianth removed; 3, Ovary, style, and stigma; 4, Stamen with narrow filament; 5, Stamen with broad filament; 6, Cross section of ovary; all enlarged.

PLATE 71.

JATROPHA HIRSUTA, Hochst.
Natural Order EUPHORBIACEÆ.

Stems, several from a woody root, erect, terete or sub-terete, glabrous, shining, red-brown, leafy, 3 to 8 inches or more high, sometimes branching. Leaves alternate, sub-sessile, stipulate, ovate, oval-oblong or sub-rotund, acute or mucronate, glabrous, or sometimes pilose, margin hyaline, and with a few scattered hyaline glandular teeth, midrib prominent, and tinted red beneath, veinlets and venules plainly marked; 1½ to 5 inches long, 1¼ to 3 inches wide. Stipules very small, bristly and glandular at apex; sometimes branched. Inflorescence in terminal corymbs, monœcious. Male flowers pedicelled, pedicels 2 lines long. Calyx, 5 parted nearly to base, 3 to 4 lines long, sepals broadly lanceolate, ciliate with 10 to 16 stalked glands on upper third, occasionally with a few pilose hairs on surface, yellow, 3 to 4 lines long. Bracts linear or subulate, glandular like calyx lobes. Corolla of 5, obovate, or oblanceolate petals which are connate at base, and twice as long as calyx, pilose with a few white hairs in lower portion inside, yellow, imbricate. Disk of 5, small, compressed glands, alternate with petals. Stamens 7 to 10, central, filaments united at base into a column, the 3 central ones longest. Anthers 2 celled. Female flowers less numerous than the male, and usually in a fork of the lower branches of the corymb. Calyx similar to that of the male flowers, but usually with more numerous glands, and hairs. Corolla and disk similar to those of the male flowers. Ovary ovate, styles 3, stigmas flattened, a little concave on the upper side. Capsule ovate, 1 inch long, ¾ inch diameter, deeply 3 lobed, the lobes again ribbed, 3 celled, cells 1 seeded, seeds large, carunculate.

Habitat: NATAL: Open ground from near the sea level to at least 2,000 feet alt. Inanda, Wood No. 211.

Drawn and described from specimens gathered near Durban, September, 1898.

The genus Jatropha includes about 68 species, all natives of tropical, and subtropical countries, and is one of the genera of Euphorbiaceæ whose flowers are furnished with conspicuous petals. In South Africa we have 4 species of the genus, two of which are found in Natal, but we cannot learn that they are applied to any useful purpose. One or more of the foreign species furnish an oil which is obtained by crushing the seeds. J. curcas, or Curcas purgans which is a synonym, is occasionally found in cultivation in Natal, and J. multifida is frequently seen in gardens, the seeds of both are deleterious, if not absolutely poisonous. The native name of the plant above described is i-Godalide, or u-Godile.

Fig. 1, Stem with leaves, flowers and fruit about natural size; 2, Section of male flower; 3, Section of female flower; 4, Bract; 5, Stamen, back and front

view; 6, Stigma, front and side view; 7, Calyx, opened; 8, Vertical section of ovary; 9, Cross section of ovary; all enlarged.

PLATE 72.

ONCOBA KRAUSSIANA, Planch.
Natural Order BIXINEÆ.

A small tree bearing large white flowers, staminal only, and perfect on the same tree. Bark rough, ash coloured, branches glabrous, twigs finely pubescent. Leaves alternate, exstipulate, oblong, obtuse at both ends, entire, glabrous, midrib prominent beneath and lighter in colour than the lamina, dark and glossy on upper surface, paler and dull beneath, 2–5 inches long, ¾–2 inches wide, edge slightly recurved. Flowers solitary, or two or three on a common peduncle, white, pedicels 1½ to 3 inches long, terete. Sepals 3, concave, unequal, deciduous, imbricate in bud, green, the inner with broad white membranous edges, the next with one edge white and membranous, the outer dark green; 8 to 10 lines long, 4 to 5 lines wide. Petals 10 to 12, twice as long as sepals, spathulate, white, veiny, with a few scattered hairs on margin. Stamens many, in several rows, inserted under the ovary. Filaments filiform, white, anthers basifixed, linear, splitting at edges, yellow. Style cylindrical, stigma flattened and irregularly cut into 3 or more short rays. Ovary superior, pubescent, 1 celled, many ovuled, with 3 or 4 parietal placentas. Berry tough and leathery, when ripe yellow, and splitting irregularly.

Habitat: NATAL: Coast districts, common.

Drawn and described from specimens gathered on Berea, October, 1898.

Known to the natives as um-Namnami, and often called by colonists "Dog-rose" on account of the similarity of the flowers. The only difference between the perfect and the imperfect flowers appears to be that one contains an ovary while the other does not. We are not aware that the plant is applied to any use. In the Genera Plantarum this genus is described as polygamous, but we have only seen two kinds of flowers, staminate and perfect, never pistillate only. The description of the genus and species in the Flora Capensis are both inaccurate.

Fig. 1, Branch with leaves and flowers; one flower perfect, and two male, about natural size; 2, Calyx, ovary and style; 3, Style and stigma; 4, Stamen, front and side view; 5, Section of ovary; all enlarged; 6, Berry natural size.

PLATE 73.

ERIOSPERMUM NATALENSE, Baker.
Natural Order, LILIACEÆ.

Rootstock a large tuber 1 to 2 inches or more in diameter emitting fibrous roots from all parts of its surface. Leaves 1–2 to each tuber, on long petioles, the blade orbicular, or oblate-orbicular, obtuse at apex, cordate at base, the lobes folding over, then meeting by their edges and forming a split tube at apex of petiole; minutely pubescent above, glabrous and shining beneath, 2½ to 4 inches long and broad; petiole terete, finely and distantly pilose. Peduncle slender, terete, glabrous, 12 to 18 inches long, having at base an ovate amplexicaul leaf which is 1–2 inches long, ¾–1¼ inches wide. Raceme lax, 6–8 inches long, lengthening in fruit. Pedicels erecto-patent, 1–1¾ inches long, bracts minute, 1–2 lines long,

lanceolate. Perianth 6 parted nearly to base, the three outer segments oblong, 2–2½ lines long, ¾–1 line wide, green with minute brown spots; the three inner ones obovate, hooded or incurved at apex, equalling outer ones in size, white with green keel, brownish at base. Stamens 6, shorter than perianth, filaments lanceolate, white. Anthers 2 celled, versatile. Ovary 3 lobed, lobes rounded, 3 celled, many seeded. Capsule shortly clavate, deeply 3 lobed, seeds densely covered with long white hairs.

Habitat: NATAL: Coast to at least 2,000 feet above sea level. Inanda, Wood No. 256. Near Durban, distributed from Botanic Garden as No. 107. Also in Pondoland and Griqualand East.

Drawn and described from specimens gathered near Durban, October, 1898.

This genus includes about 25 species inhabiting Tropical and South Africa, of which 7 are found in Natal. It is distinguished from its nearest allies by the dense woolly coating of the seeds. We know of no use to which the plant is applied, and the natives do not appear to have any special name for it.

Fig. 1, Tuber and leaf; 2, Peduncle with flowers, natural size; 3, Flower with two perianth lobes, and two stamens removed; 4, Stamen front view; 5, Stamen back view; 6, Ovary, style and stigma; 7, Cross section of ovary; all enlarged.

PLATE 74.

ACOKANTHERA SPECTABILIS, Hook, f.
Natural Order, APOCYNEÆ.

A shrub or small tree, 10–15 feet high, with milky glutinous sap. Bark of trunk and branches rough and wrinkled, dark coloured; twigs green, glabrous, usually compressed at nodes. Leaves opposite, decussate, petiolate, exstipulate, oblong, lanceolate, or oblongo-lanceolate, with a recurved mucro, quite entire, coriaceous, margin reflexed, dark green above, lighter beneath, midvein prominent beneath, lateral obscure, 3–5 inches long, 1–1¾ inches wide; petiole channelled above, ½–¾ inch long. Inflorescence in axillary many flowered panicles, or paniculato-racemose; much shorter than the leaves. Calyx gamosepalous, 5 parted nearly to base, lobes erect, oblongo-lanceolate, green, minutely pubescent, imbricate, 1½–2 lines long. Corolla salver shaped, tube terete, a little swollen below the apex, minutely glandular-pubescent, especially in central portion, internally pilose, 6–9 lines long; lobes 5, twisted to the left in bud, lanceolate, spreading to 5 lines diameter, pure white. Stamens 5, inserted on corolla tube just below throat, included, filaments very short, and with a few pilose hairs. Anthers 2 celled, cordate at base, acute and with long hairs at apex. Style filiform. Stigma oblong, pilose at apex. Ovary 2 celled, cells 1 seeded. Berry ovate, deep purple when ripe, 1–2 seeded. Seeds compressed, ovate, 6-9 lines long.

Habitat: NATAL: Coast districts, not uncommon.

Drawn and described from specimens gathered on Berea, October, 1898.

This plant was formerly known as Toxicophlæa spectabilis, Sond or T. Thunbergii (Hort Williams), but the genus Toxicophlæa has been abolished, and the name here given is the correct one. The genus Acokanthera contains 5 species, all natives of South Africa, two of which, viz., A venenata, and A specta-

bilis are found in Natal. The plant here described is a handsome shrub, bearing its pure white flowers in great profusion, and is well worthy of more extended cultivation. The bark is considered to be more or less poisonous, and the bark of A venenata was used in the early days of the Colony by the Bushmen, as one of the ingredients of their arrow poison.

Fig. 1, Branch with leaves, flowers and fruit, natural size; 2, Calyx lobe; 3, Corolla in bud showing æstivation; 4, Section of corolla, two lobes and two stamens removed; 5, Stamen front view; 6, Stamen back view; 7, Ovary, style and stigma; 8, Cross section of ovary; all enlarged.

PLATE 75.

MORÆA GLAUCA, Wood & Evans.
Natural Order, IRIDEÆ.

Corm globose, ¾–1 inch diameter, usually with several younger and smaller ones clustered round it. Tunics papery, acuminate, with prominent longitudinal veins, and very oblique veinlets; lamina straw coloured, veins and veinlets dark red brown. Stem short, including numerous small bulbils at base, 1–2 at each node. Leaves, basal one sometimes 6 feet long, ¾ inch wide at base, gradually narrowing to apex, often, perhaps always flaccid in upper portion, glabrous, subglaucous. Spathe valves 3–5 inches long, cylindrical, 2, or several flowered, interior one largest, exterior one connate in a tube at base for more than half its length, long acuminate, green with withered tips. Perianth segments spreading, oblong, exterior ones mucronate at apex, interior similar but narrower, obtuse, all 1 to 1¼ inches long, ½ inch wide; yellow with brown spots at base of each lobe, midvein conspicuous. Stamens 3, exserted, connate for two thirds of their length. Anthers sagittate, linear-oblong, extrorse, connective produced beyond the cells, pollen yellow. Styles spathulate, finely ciliate on upper margin, crests lanceolate, with the free interior margins running into the base of the petaloid style. Ovary 3 celled, obtusely 3 angled, ovules numerous, 1 to 2 seriate, superposed. Capsule not seen.

Habitat: NATAL: In swamp near Mooi River. Wood No. 4035.

Drawn and described from a plant which flowered in the Botanic Garden, Durban, the corms having been originally brought from Mooi River.

This plant belongs to the Subgenus Eumoræa, and to the Section Corymbosæ, and comes near to M. iriopetala, but differs in size and coating of the corms, length of the spathe valves, which are withered at the tip, colour of flowers, and shape of perianth lobes. From M. mira it differs by length of leaf stem and peduncle, colour of flower and pollen, and cutting of style crests. This is one of the plants called by Dutch colonists "Tulp" or "Tulip" and which is so frequently fatal to cattle, its leaves appear in the early spring when grass is not plentiful, and cattle, especially perhaps those from a district where the plant is not found, eat it often with fatal results, whole spans of oxen having been said to have been killed by it. Probably several species of Moræa have the same properties and are included in the generic name, "Tulp." Flowers in October and November.

Fig. 1, Stem, portion of leaf, and flower; 2, Lower part of stem and leaf, showing bulbils natural size; 3, Flower; 4, Stamen; 5, Styles and stigmas; 6, Cross section of ovary; all enlarged.

PLATE 76.

Loranthus Kraussianus, Meisn.

Natural Order, Loranthaceæ.

Parasitic on trees. Branches terete, glabrous, light brown, lenticulate, young ones green. Leaves opposite, subopposite or scattered, petiolate, exstipulate, ovate, ovate-oblong, or ovato-lanceolate, cuneate at base, acuminate to an obtuse apex, quite entire, glabrous and shining, coriaceous, veins indistinct; 1¼ to 3 inches long, ½ to 1½ inches wide, petiole 4–6 lines long. Inflorescence in 3 to 8 flowered umbels, peduncles axillary, opposite or scattered on the branches, flowers pedicellate. Calyx gamosepalous, ovate, entire, green, limb very short, fringed or ciliate, bract 1, shorter than calyx, adnate to the pedicel. Corolla gamopetalous, valvate, tube strongly constricted above the base, which is much inflated, then gradually widening to centre, lobes 5 to 6, linear, a little contracted and concave at apex, bright red externally, a little lighter within, dull greenish yellow at apex, 1½ to 2 inches long, the swollen base 2½ lines diameter, the constricted portion ½ line, the broadest portion of the tube above the constriction 2 lines wide, apex of bud obtuse. Stamens 5–6, one on each corolla lobe, inserted at base of concave apex, two thirds upwards from the sinus. Filaments short. Anthers linear, 2 celled, erect, attached at base; when in bud cohering just below the stigma. Style filiform, stigma sub-globose, densely and minutely papillose. Ovary inferior, 1 celled, 1 seeded. Fruit a berry, red when ripe.

Habitat: Natal: Parasitic on trees in the coast and midland districts.

Drawn and described from a plant in flower on Berea, November, 1898.

The genus is a large one comprising over 300 species, of which 5 only are found in Natal. It is closely allied to Viscum, one member of which genus, viz., Viscum album is the common Mistletoe of Europe. The flowers of the above described species are visited by "Sun Birds," principally by the olive sun bird (Cinniris olivaceous) which inserts its long bill in the slits of the unopened corolla, causing it to open suddenly, bursting the anthers and scattering the pollen not upon the stigma of the same flower, but upon the head of the Sun birds who carry it to other flowers. Experiments made by covering many flowers with nets show that thus protected from the birds, no seeds are set. The fruit is a berry and the seeds are covered with mucilage, they are used in common with the berries of allied species to make a very effective bird lime. The berries are eaten by birds, notably the little Tinker bird (Barbetula pusilla); it rejects the seed and viscid matter cleaning its bill upon branches of trees to which the seeds adhere, thus ensuring the propagation of the plant. A full account of the fertilisation of this flower, and an allied species (Loranthus Dregei) is given in "Nature" under date, January 3rd, 1895.

Fig. 1, Branch with leaves and flowers, reduced; 2, Calyx, corolla removed showing upper portion of ovary; 3, Bud; 4, Bud opened out showing position of stamens; 5, Bud just before opening; 6, Flower; all enlarged.

PLATE 77.

COMBRETUM (Poivrea bracteosa, Hochst).
Natural Order, COMBRETACEÆ.

An upright branching shrub 6 to 10 feet high. Twigs terete, gray, glabrous, younger ones green, pubescent. Leaves oppo-ite, ternate, or subopposite, petiolate, exstipulate, ovate or ovate-oblong, tapering to both ends, mucronulate at apex, obtuse at base; margin entire, a little recurved, veins and veinlets prominent beneath, plainly visible above; quite glabrous, except for minute tufts of hairs in angles of veins beneath, dull above, shining beneath; 2½ to 3 inches long, 1 to 1½ inches wide; petioles 3 lines long. Inflorescence in short, densely flowered axillary and terminal racemes, which are 1 to 2 inches long. Calyx gamosepalous, tube constricted above the ovary, and 5-ribbed, then suddenly expanding, limb campanulate, 5-cleft half way down, lobes deltoid, acute, dull red, pubescent on both surfaces, glandular within, tube green, pubescent on outer surface, glabrous within, throat closed by a ring of white hairs; the whole calyx including ovary 6 lines long; bracts leaflike, stalked, oblong, acute at apex, obtuse at base, veiny; 3 to 4 lines long. Petals 5, inserted on calyx tube just below sinuses and alternate with lobes, clawed, ovate, veiny, pubescent, ciliate with long hairs, scarlet; 4 lines long, 2 to 2¼ lines wide. Stamens 10, in two rows, exserted, 5 inserted with the petals, and 5 below and opposite to them, the calyx tube being a little swollen and forming a ring at point of junction of each filament. Filaments filiform, scarlet, terete. Anthers 2 celled, dorsally affixed. Style 1, scarlet, stigma minute, obtuse. Ovary 1 celled, 2 ovuled, pubescent. Fruit ovate, or globose, 1 seeded by abortion, light coloured and glabrous.

Habitat: NATAL: Coast districts near the sea.

Drawn and described from specimens gathered near Durban, October, 1898.

A handsome shrub well worth cultivation, its bright scarlet flowers, being very conspicuous during the months of September and October. We have not met with it more than two, or at most three miles from the sea coast. The fruit is known locally as "Hiccup Nut" and is palatable, but usually produces violent hiccough.

The genus Combretum with which Poivrea is now incorporated contains about 120 species widely distributed in tropical and subtropical regions; we have in Natal 8 species, the one here described being the only one in which the fruit is not winged.

Fig. 1, Branch with leaves and flowers, natural size; 2, Flower and bract; 3, Section of flower; 4, Section of bud showing position of stamens; 5, Stamens, front and side view; 6. Stigma; 7, Section of ovary; all enlarged.

PLATE 78.

PORTULACARIA AFRA, Jacq.
Natural Order, PORTULACEÆ.

A shrub reaching to 12 feet in height, and much branched. Branches and twigs opposite, decussate. Wood soft. Bark brown, glabrous. Twigs terete, swollen and compressed at nodes. Leaves opposite, sessile, exstipulate, broadly ovate or sub-rotund, entire, mucronate, thick and fleshy, veins indistinct; ½ to 1

inch long, 6 to 10 lines wide. Inflorescence in axillary or terminal racemes, or sub-paniculate, flowers rosy, disposed in small clusters on the peduncles, which are slightly swollen at base of each cluster, and have one or more brown membranous bracts at each fascicle. Pedicels slender, filiform, a little thickened near apex, 2½ to 3½ lines long. Receptacle turbinate. Sepals 2, minute, semi-rotund, attached by the broad base, edge quite entire; membranous, greenish yellow at base, margin rosy. Petals 5, hypogynous, equal, obovate, persistent; 1 to 2 lines long. Stamens 4–5 inserted with petals, exserted, filaments linear, compressed and widened at base, white. Anthers 2 celled, dorsally affixed, bright red. Ovary superior, ovate, triquetrous, angles winged and deeply tinged with red; 1 celled, 1 ovuled. Style none. Stigmas 3, sessile, spreading, densely muricate above, white. Fruit not seen.

Habitat: NATAL: Coast and midlands.

Drawn and described from specimens in flower on Berea, October, 1898.

The genus Portulacaria includes two species only, the one here described which is also found in some parts of the Cape Colony, and P. namaquensis, which, as the name implies, is a native of Namaqualand. P. afra has, we understand, been exported to Algeria, and Australia as a browsing plant for cattle and sheep, and is said also to be a valuable food for ostriches, but it does not seem to find much favour for cattle feeding in Natal. The leaves are sour, and have been used for culinary purposes. It is known to the Dutch colonists as "Spekboom" and to Natal colonists as "Elephant food."

Fig. 1, Branch with leaves and flowers, natural size; 2, Flower and buds in situ; 3, Section of flower; 4, Stamen; 5, Calyx, ovary and stigmas; all enlarged.

PLATE 79.

DALBERGIA ARMATA, E.M.
Natural Order, LEGUMINOSAE.

A climbing spinous shrub with dark coloured bark, the spines on the stems being sometimes 3 inches long. Leaves alternate, unequally pinnate, 10 to 16 jugate, 1½ to 2½ inches long; common petiole 2 lines long, swollen at base, finely rusty-pubescent; leaflets sub-opposite or alternate, oblong, obtuse at each end, terminal one obovate; paler beneath, very finely pubescent when young, older glabrous, 3 to 4 lines long, 1 to 2 lines wide, petiolules ½ line long. Inflorescence axillary, corymboso-paniculate, shorter than leaves. Bracts 2, equal, minutely rusty-pubescent, ciliate, persistent. Calyx campanulate, 5 toothed, two upper teeth broader, obtuse, three lower subacute, middle one longest; all puberulous. Corolla 2 lines long. Standard broadly ovate, emarginate, erect, wings and keel much smaller; Stamens 9, monadelphous, anthers orbicular. Ovary stipitate, few ovuled. Legume compressed, oblong, obtuse, tapering to base, glabrate, veiny, 1 to 3 seeded, papery, 1 to 2 inches long, ½ to ¾ inch wide.

Habitat: NATAL: Edges of woods in coast and midland districts. Flowering in October and November.

Drawn and described from plants in flower on Berea, November, 1898.

A climbing shrub called by the natives "Hluhluwe." The woody stems are furnished with long spines, and climb to the tops of trees in the bush, the flowers

are creamy white, and small, but very abundant, and scented. It is said to be sometimes without spines, but it usually has them on the lower part, at any rate, of the stem, hence its specific name "armata." The habit of the plant makes it very difficult to estimate the length to which it grows, though it must in many cases be very great, as it twines through the bush and appears on the tops of the tallest trees. The genus is a tropical and sub-tropical one, and includes between 60 and 70 species, some of which yield valuable timber, but the South African species are of no special value. Both this plant and an allied species D. obovata are attacked by an insect which produces very curious galls; on the above described species the galls are much smaller than those on D. obovata, borne singly, and not in clusters as in that species; these galls have sometimes been mistaken for the fruit of the plant; in both cases the galls are hollow, and contain a single larva.

Fig 1, Branch with leaves, flowers, young seed vessels, and galls, about natural size; 2, Flower, side view; 3, Flower, the parts separated, a vexillum; b b wings; c carina; 4, Staminal tube, opened out; 5, Anther; 6, Calyx and Ovary; 7, Calyx opened out, all enlarged; 8, Legume, reduced.

PLATE 80.

TRICHILIA EMETICA, Vahl.
Natural Order, MELIACEÆ.

A handsome tree 20 to 50 feet high, with spreading branches. Bark dark coloured. Leaves mostly at ends of branches, scattered, petiolate, unequally pinnate, rachis 5 to 8 inches long to last pair of pinnae, swollen at base, and channelled on upper portion, pubescent. Leaflets in 2 to 5 pairs, opposite or sub-opposite, petiolulate, entire, oblong, tapering to both ends, obtuse or emarginate at apex, lowermost pair the smallest, gradually increasing in size upwards, terminal one equalling the uppermost pair, glabrous, dark green and shining above, lighter, dull green and pubescent on veins beneath, veins and veinlets conspicuous above, prominent beneath; 2 to 6 inches long, 1–2 inches wide; petiolules 3 lines long, swollen and channelled above, the terminal one swollen at base, compressed upwards, 6 lines long. Inflorescence in axillary, few flowered panicles, which are very much shorter than the leaves, and finely pubescent. Calyx gamosepalous, 5 cleft half way down, lobes rounded, 1 line long. Corolla of 5 oblong or strap shaped, coriaceous, hypogynous petals 6 to 7 lines long, 2 lines wide, widely spreading; in age recurved. Stamens 8–10, hypogynous, filaments united in a tube, the strap shaped filaments being each 2 toothed at apex, the tube 20 ribbed, the ribs pilose, light brown, interspaces white, subglabrous; 3 lines long, 2 lines wide, pilose within. Anthers on summit of tube, sessile between the teeth, and projecting beyond them, 2 celled, introrse, acute. Style 1, cylindrical, finely puberulous, as long as stamens. Stigma depressed-globose. Ovary superior, 2–4 celled, cells 2 ovuled. Capsule 2–4 celled, loculicidally 2–4 valved, valves septiferous in the middle. Cells 1–2 seeded. Seeds black with a fleshy red arillus.

Habitat: NATAL: Coast districts. Wood No. 5612 (sterile) 5615 (fertile).

Drawn and described from specimens in flower on Berea, November, 1898.

The genus Trichilia includes about 30 species, natives of Tropical America, and South and Tropical Africa, the Flora Capensis enumerates 3 species as natives of South Africa, and there is one other T. alata, N.E.B., Wood 1022 & 1043 which is very different in appearance from any described in the Flora Capensis. The

tree above described has usually been known here as T. Dregeana, but the name here given is the correct one. This tree is perhaps one of the handsomest of our indigenous trees, and the one from which the specimens were obtained for our description is a magnificent umbrageous tree not surpassed in beauty by any known to us in the coast districts. In the description of the genus and species in the Flora Capensis, or of the genus in the Genera Plantarum, no allusion is made to any member of the genus bearing unisexual flowers, but in Wood's No. 5612 the ovary is always abortive, and though the tree has been under constant observation for many years past, it has never been known to bear a single seed. Some other genera belonging to the same Order are polygamo-dioecious, and it would seem that Trichilia, or some of its species must be included in the number, but further information on this matter is required. The seeds yield an oil rather plentifully which solidifies at our ordinary winter temperature, but liquefies during the summer months; specimens of this oil were sent by the writer to the Colonial and Indian Exhibition. The Flora of Tropical Africa says of this tree, "The oil and tallow obtained from the seeds Dr. Kirk says is valuable, and may be had in quantity. The oil is used in cookery." The native name of the tree is um-Kuhla.

Fig. 1, Twig with leaves and flowers, a little reduced; 2, Section of flower; 3, Staminal tube opened; 4, Calyx, ovary, style and stigma; 5, Stamen front and side view; 6, Section of ovary; all enlarged.

PLATE 81.

ANASTRABE INTEGERRIMA, E.M.
Natural Order, SCROPHULARINEÆ.

A shrub or small tree, 6-20 feet high. Branches spreading, old ones terete, young ones compressed and tomentose. Leaves opposite or sub-opposite, coriaceous, dark green above, whitish beneath, generally broadly lanceolate, but sometimes ob-lanceolate to obovate; entire, slightly tomentose beneath, especially on veins; length including petiole, 1½–2½ inches. Inflorescence axillary, cymose. Peduncles tomentose. Cymes 1–1½ inches long, 6 to many flowered. Calyx broadly campanulate, 5 fid, tomentose, coriaceous, lobes acute, 1½–2 lines long. Corolla bi-labiate, tomentose, upper lip 2 fid, lobes broadly ovate, sub-acute, lower lip larger, boat shaped, concave, 3 toothed at apex, more than twice as long as calyx. Stamens 4, didynamous, sub-ascending. Filaments flat. Anthers 2 celled, cells confluent at apex, yellow with scarlet spot at apex of filament. Ovary tomentose, 2 celled. Style slightly curved. Stigma minute. Capsule oblong.

Habitat: NATAL: Inanda, Jan, Wood No. 449; Government Herbarium No. 2801. Near Sydenham, Jan, Wood 7383.

Drawn and described from specimens gathered near Palmiet, February, 1899.

This is the isi-Pambati of the natives, and in the early days of the Colony, the poles were much used for building the wattle and daub houses with which farmers in those days had to be content. The wood is of little use for wagon or other similar work, as it is liable to warp and split, nor does it usually grow to a large size.

Fig. 1, Branch with leaves and flowers, about natural size; 2, Flower; 3,

Corolla, front view; 4, Corolla, opened to show insertion of stamens; 5, Calyx and style; 6, Stamen; 7, Ovary and style; 8, Capsule and Calyx; 9, Section of ovary; all enlarged.

PLATE 82.

INDIGOFERA MICRANTHA, E. Meyer.
Natural Order LEGUMINOSÆ.

A slender, erect, much branched woody shrub, with light coloured bark. Leaves unequally pinnate, in 4 to 5 pairs, opposite or alternate, with minute glandular stipules; $\frac{3}{4}$ to $1\frac{1}{2}$ inches long, including petiole; common petiole below the leaves 1 to $1\frac{1}{2}$ lines long. Terminal leaflet the longest, the rest successively shorter, the lowest 2 lines long, dark green above, glaucous beneath, broadly ovate or obovate, mucronate, thin, microscopically strigulose beneath, 3 to 5 lines long, 2 to 4 lines wide. Racemes very slender, laxly few flowered, 1 to 2 inches long. Bracts very minute. Calyx glabrescent, shortly 5 toothed. Petals puberulous. Stamens diadelphous, 9–1. Anthers apiculate. Legumes subcompressed, glabrous, straight, several seeded, $\frac{3}{4}$ to 1 inch long.

Habitat: NATAL: Spring Grange near Durban, January to May. Sydenham near Durban, May, Wood No. 6086. Without precise locality, Gerrard & McKen No. 1.

Drawn and described from specimens gathered near Durban, January, 1899.

In the Flora Capensis this plant is placed in the Section Producteæ, one of the characteristics of which is, that the leaves are opposite, but we find them both opposite and alternate on the same plant. The flowers are white, but not plentifully produced. It is not a rare plant, but is confined to the coast districts as far as at present known. Plants belonging to this genus yield the Indigo of commerce, and some of the species which are indigenous to Natal yield the dye plentifully. In Wood's Preliminary Catalogue of Natal Plants 30 species are enumerated, and several have been added since its publication. Members of the genus occur throughout South Africa, but it is often difficult to distinguish them specifically, especially when legumes are not present.

Fig. 1, Portion of branch; natural size; 2, Flower with pedicel and bract; 3, Corolla with the petals separated; 4, Staminal tube opened; 5, Calyx, stamens and ovary; 6, Calyx, ovary and stamens removed; 7, Stamen; all variously enlarged.

PLATE 83.

POLYGALA CAPILLARIS, E. Meyer.
Natural Order POLYGALACEÆ.

An erect herbaceous plant. Stems solitary, erect, simple or branched, very slender, a little angular, glabrous, 6–15 inches high to base of raceme. Racemes terminal on stems and branches, densely many flowered, 1 to 3 inches long. Leaves very few and distant, alternate, linear, acute, glabrous, sub-sessile, 3–4 lines long, $\frac{1}{4}$–$\frac{1}{2}$ line wide. Pedicels much shorter than the flowers. Bracts lanceolate, two thirds as long as the minute, white, or pinky white young flowers, deciduous. Alæ oblong-ovate, obtuse or mucronate, 3 veined. Anterior sepals 2, lanceolate, half as long as alæ, and one third their width; posterior one broadly

ovate, all clawed and with a midvein. Corolla of 3 petals, which are united in a sub-globose keel, the lateral ones oblong, longer than the central one which is furnished with a fleshy 4–8 fid crest, whose lobes are obtuse, and minutely glandulose. Stamens 8, united in a split tube and concealed in the folded anterior petal. Anthers obliquely ovate, dehiscing by a large pore at apex. Style 1, declinate, curved. Stigma spoon shaped, entire, pilose at apex. Capsule compressed, oval-orbicular, 2-celled, cells 1-seeded. Seeds oblong-ovate, densely pilose.

Habitat: NATAL: In moist ground, Clairmont, Wood No. 7378, J. Sanderson, No. 920.

Drawn and described from specimens gathered near Durban, February, 1899.

This genus includes about 200 species, which are found in most temperate and warm climates. In Natal we have 15 or more species, three of which at least have been cultivated, and are very ornamental, but the one described above is inconspicuous, and can hardly be distinguished from the grass amongst which it grows. None of the species have any useful properties, so far as known to us, though P. serpentaria, which is found all over South Africa had at one time a reputation as a cure for the bites of venomous snakes.

Fig. 1, Plants, natural size; 2, Flower; 3, Petals; 4, Ovary, style and stigma, side view; 5, Same seen from above; 6, Stamen; 7, Staminal tube opened; 8, Section of flower, petals removed; 9, Sepals; 10, Section of capsule showing attachment of seeds; 11, Cross section of capsule; all enlarged.

PLATE 84.

CLUYTIA PULCHELLA, Linn.
Natural Order EUPHORBIACEÆ.

A small erect shrub, 1½–3 feet high. Stems erect, simple or branched, terete, glabrous, green. Leaves alternate, petiolate, exstipulate, ovate to ovate-oblong, or ovate lanceolate, entire, glabrous, veins conspicuous on both sides; green above, paler beneath, ½–2 inches long, ½–1 inch broad; petiole 1–1½ lines long, channelled above. Flowers dicœcious. Male flowers axillary, pedunculate, peduncles slender, ½ inch long. Calyx 5-parted, lobes ovate, imbricate, 1½ lines long. Corolla of 5, broadly spathulate petals, alternate with calyx lobes, and equalling them in length, alternating with as many 2–3-fid yellow glands, the receptacle being also studded with numerous similar but smaller simple glands. Stamens 5, radiating from the upper portion of a central column, and being surmounted by an abortive style and stigma, which project slightly above the calyx and corolla. Female, calyx and corolla similar to male, glands in one row at base of corolla lobes. Ovary ovate, 3-celled, glabrous. Styles 3, recurved, compressed, 2-lobed at apex. Stigmas truncate. Capsule ovate, seated in the persistent calyx and corolla, 3-lobed, glabrous, 3-celled, cells 1-seeded.

Habitat: NATAL: All over the Colony.

Drawn and described from specimens gathered near Durban, March, 1899. Wood 7387.

This genus contains about 30 species, natives of Tropical and South Africa, and 3 in Arabia. It is somewhat remarkable on account of the stamens in the male flowers being united in a central column, with the anthers radiating from it

near the summit, and also for the difference in the glands of the male and female flowers.

Fig. 1, Male and female stems, natural size; 2, Male flower; 3, Female flower; 4, Stamens with abortive pistil; 5, Section of male flower, showing glands; 6, Section of female flower with glands; 7, Stamen; 8, Female flower opened out pistil removed; all enlarged.

PLATE 85.

PLECTRANTHUS SACCATUS, Benth.
Natural Order LABIATÆ.

A somewhat succulent undershrub. Stems erect, or supported by adjacent shrubs, branching, quadrangular with rounded angles, finely pubescent. Leaves opposite, petiolate, deltoid in general outline, coarsely crenate, with 4–7 rounded lobes on each side, the terminal one deltoid, acute, upper surface hispid, the short hairs springing from a swollen base, minutely glandular, under surface finely glandular pubescent, and much lighter coloured; $1\frac{1}{2}$–$3\frac{1}{2}$ inches long, $1\frac{1}{2}$–3 inches broad. Petiole $\frac{3}{4}$–$2\frac{1}{2}$ inches long, channelled above in upper portion. Inflorescence in terminal racemes. Flowers deep lavender. Calyx 5-lobed, tube short, lower lobes acuminate, erect, upper broadly ovate, acute, recurved, the whole calyx $1\frac{1}{4}$–$1\frac{3}{4}$ lines long, minutely pubescent. Corolla gamopetalous, 2-lobed, tube compressed, saccate at base, $\frac{1}{3}$ inch long, $\frac{1}{4}$ inch wide, limb deeply 2-lobed, upper lobe subquadrangular, the upper angles rounded, the lower acute, emarginate, 5 lines long, 6 lines wide, the upper edges at first connate, afterwards strongly reflexed, lower lobe ovate-oblong, boat shaped, reflexed, 5 lines long. Stamens 4, declinate, didynamous, equalling lower lobe of corolla, inserted on anterior portion of tube just below throat. Filaments subulate. Anther cells confluent, and having a small gland at back on one side of the filament. Style filiform. Stigma minutely 2-fid. Nuts 4, in the base of enlarged calyx.

Habitat: NATAL: Coast to midlands. Inanda, January, Wood No. 323.

Drawn and described from specimens gathered near Palmiet, February, 1899. Wood No. 7382.

The genus Plectranthus, according to the Index Kewensis contains about 70 species found in tropical and sub-tropical regions. In Natal we have many species some of which are as yet undescribed, and probably P. saccatus is one of the handsomest of them. It is usually found in damp places in shade, and is frequently seen in cultivation.

Fig. 1, Branch with leaves and flowers about natural size; 2, Section of flower; 3, Upper lobe of corolla; 4, Lower lobe of corolla; 5, Calyx, side view; 6, Calyx front view, showing nuts and unilateral disk; 7, Stamen, front view; 8, Stamen, back view; all variously enlarged.

PLATE 86.

DREGEA FLORIBUNDA, E. Meyer.
Natural Order, ASCLEPIADEÆ.

A climbing, copiously branching shrub with yellow flowers. Stem and branches pubescent, young ones densely so, terete, light coloured. Leaves oppo-

site, petiolate, exstipulate, ovate, oblong, or ovate-oblong, entire, acute or acuminate pubescent, on veins and veinlets, lamina glabrous, 1¼–2½ inches long, ¾–1½ inches wide. Petiole ½–¾ inch long, densely rusty pubescent. Inflorescence in axillary umbels, peduncles ¼–¾ inch long, pedicels 2–4 lines long. Calyx 5-parted to base, ovate, obtuse, pubescent, ciliate, half as long as corolla. Corolla gamopetalous, tube campanulate, lobes narrow deltoid, obtuse, glabrous. Corona of 5, fleshy, boat shaped scales, alternate with corolla lobes. Anthers minute, tipped by a long, white, obtuse, membrane. Pollinia erect, oblong, translucent, minute. Stigma conical. Follicles in pairs, divaricate, broadly 4-winged, 2–2½ inches long, 1–1½ inches wide, including the wings, wings broad, leaflike. Seeds comose.

Habitat: NATAL: Coast districts, not very common. Wood No. 7384.

Drawn and described from specimens gathered near Durban, in flower and fruit, February, 1899.

This genus contains 4 species only, one being a native of tropical Africa, one of Arabia, one of East Indies, and the above named one. It is easily known by its large 4-winged follicles. It has no useful properties so far as known to us, and the natives do not appear to have any distinctive name for it.

Fig. 1, Branch with leaves and flowers; 2, Follicle, natural size; 3, Flower; 4, Flower seen from above; 5, Section of flower; 6, Corolla opened showing the corona scales; 7, Gynostege; 8, Pollinia; all enlarged.

PLATE 87.

PEDDIEA AFRICANA, Harvey.
Natural Order, THYMELEÆ.

A shrub 5–10 feet high with yellow-green flowers. Stem erect, branching, bark tough, dark coloured, branches and twigs terete, somewhat wrinkled with scars of fallen leaves. Leaves scattered, chiefly towards ends of branches, coriaceous, oblong, oblong-obovate, oblanceolate or broadly lanceolate, quite entire, obtuse at apex, tapering to a 1–1½ line long petiole; lamina 1–2½ inches long, 1–1½ inches wide, glabrous and shining. Inflorescence in umbels which are terminal on the branches; peduncles ½–¾ inch long; pedicels ¼ inch long. Perianth tube subcylindrical, ribbed, and a little narrowed at apex, 5–6 lines long, 1 line wide, lobes 5, ovate, spreading, revolute, 1–1¼ lines long. Stamens 8–10, inserted in two rows above the middle of the perianth tube, filaments very short. Anthers 2-celled, oblong, obtuse. Ovary seated on a cup-like membranous disk, oblong, glabrous, 2-celled, cells 1-ovuled, ovules pendulous. Style filiform, short, reaching about half way from apex of ovary to lower row of stamens. Stigma minute. Drupe ovate, glabrous and shining, black when ripe, 6–7 lines long, 5–6 lines wide, pitted at apex and sometimes tipped with remains of the small style, containing 1 bony seed enclosed in a fleshy pericarp.

Habitat: NATAL: Coast to at least 2,000 feet above sea level. Inanda, June, Wood No. 580.

Drawn and described from specimens gathered near Durban, March, 1899.

The genus Peddiea contains 4 species only, two of which are natives of South Africa, one of Tropical Africa, and one of Madagascar. The plant above described is the only one known to us as inhabiting Natal, and it is not uncommon in

the coast and midland districts. In "Harvey's Genera of South African Plants" the ovary is said to be 1-celled and 1-ovuled, but in all the specimens we have examined it is as stated in the text, but one ovule is frequently, perhaps always, abortive. We do not know of any use to which the plant is put, nor do the natives use it in any way so far as known to us.

Fig. 1, Branch with leaves and flowers, natural size; 2, Flower; 3, Flower seen from above; 4, Section of flower; 5, Ovary, style and stigma; 6, Stamen; all enlarged.

Note.—In the drawing the flowers are shown rather shorter than usual, the plant from which it was made having been a dwarf variety.

PLATE 88.

BERSAMA LUCENS, Syzsz.
Natural Order, SAPINDACEÆ.

A shrub 8 to 10 feet high. Branches terete, bearing scars of fallen leaves. Bark wrinkled, light brown, becoming darker with age. Leaves alternate, exstipulate, petiolate, 5–7 foliolate; common petiole to base of odd leaflet 1½ to 3 inches long. Leaflets ovate, ob-ovate, or oblong, usually unequal-sided at base, obtuse at apex, tapering to base, glabrous and shining, coriaceous, entire; 1½ to 3 inches long, 1 to 1¾ inches wide; petiolules of terminal leaflets ½ to ¾ inch long, lateral ones 1 line long. Inflorescence racemose, racemes longer than leaves. Calyx gamosepalous, 5 cleft, lobes broadly ovate, the two anterior ones frequently joined nearly to apex, pubescent; 1 to 1½ lines long. Petals 5, oblong, sub-equal, clawed, finely pubescent. Disk unilateral, green, fleshy. Stamens 4, hypogynous, the two anterior ones connate for one fourth of their length, the posterior one free; filaments dilated at base. Anthers 2-celled, oval. Ovary superior, densely pubescent. Style filiform, shorter than stamens. Stigma minute. Fruit a 4-celled, 4-seeded capsule, one or more seeds occasionally abortive; rugose, the divisions between the cells conspicuous; septicidal, dull green, subglobose; ½ inch diameter. Seeds bright scarlet with fleshy yellow-green arillus.

Habitat: NATAL: Coast to at least 2,000 feet above sea level. Wood No. 808. Inanda. Near Durban, Wood No. 7392.

Drawn and described from specimens gathered near Palmiet, March, 1899.

This genus includes 4 species only, natives of Tropical and South Africa. The present species was formerly known as Natalia lucens, Hochst, under which name it appears in the Flora Capensis, Vol. 1, page 369, the difference between the two genera being the cohesion of only two of the stamens in Natalia, while in Bersama all are connate. We know of no use to which the plant is applied, nor do the natives appear to have a distinctive name for it as far as we can learn.

Fig. 1, Portion of branch with leaves and flowers, natural size; 1 a, Fruit; 2, Flower, side view; 3, Flower, front view; 4, Section of Flower; 5, Staminal tube opened; 6, The same showing disk; 7, Ovary and style; 8, Cross section of ovary; 9, Anther; 10, Calyx opened; all enlarged.

PLATE 89.

SAPINDUS OBLONGIFOLIUS, Sonder.
Natural Order, SAPINDACEÆ.

A shrub or small tree, 6–10 feet high, of erect habit, never branching from lower part of stem; the main root penetrating the ground to a depth of 6 feet or more. Bark light brown, minutely rusty pubescent. Leaves alternate, exstipulate, pinnate; common rachis from base to terminal leaflet, 12–16 inches long; to lowest pair of leaflets, $3\frac{1}{2}$–5 inches, swollen at base. Leaflets opposite or alternate, in 6–10 pairs, petiolulate, oblong, tapering to base and apex, obtuse or emarginate, entire, coriaceous, glabrous, margin undulate, dark green, midvein prominent beneath; $2\frac{1}{2}$–5 inches long, $1\frac{1}{4}$–$1\frac{3}{4}$ wide; petiolules 1–$1\frac{1}{2}$ lines long, rusty pubescent in axils. Inflorescence paniculate, panicles 6–15 inches long, the main branches of the panicle widely spreading, secondary ones short, all rusty pubescent. Flowers fascicled along the whole length of the branches of the panicle. *Male Flowers*; Calyx of 5 unequal sepals in two rows, outer row shortest; broadly ovate, silky pubescent, ciliate, imbricate in bud, about half as long as petals. Corolla of 5 hypogynous, oblong, ciliate, white petals 3 lines long, each with a fringed petaloid scale on lower portion of inner face. Disk fleshy, cup-shaped. Stamens 15, or rarely more, inserted on edge of disk, sub-exserted. Filaments pilose, anthers 2 celled. *Perfect Flowers.* Calyx and corolla as in male. Stamens similar in number, but with much shorter filaments, anthers containing pollen. Ovary covered with rusty hairs, 1–3 carpelled. Style 1, central, stigma minute. Fruit of 1 to 3 obovate or globose indehiscent 1 seeded carpels, 8 to 9 lines long, by 5–6 lines wide (unripe) green and pubescent when young, and sub-glabrous when ripe.

Habitat: NATAL: Coast districts generally. Berea, Wood 1917.

Drawn and described from specimens gathered at Berea, April, 1899.

In the Flora Capensis, Vol. 1, page 240 this plant is described as dicœcous, we find, however, that it is certainly polygamous and plants which in one season bear a large number of perfect flowers, in another season bear male ones only, or with but very few perfect ones. The native name of the tree is Masibele, but it has no useful properties, as far as known to us, but the ripe berries are eaten by children. The genus includes 20 or more species, inhabiting tropical and subtropical regions, and one or more of the species bear fruits the outer covering of which is used as a substitute for soap, hence the generic name Sapindus, altered from Sapo-indicus Indian soap. The jet black seeds of some of the species are used for making rosaries, necklaces, &c.

Fig. 1, Inflorescence and leaves, natural size; 2, Leaf; 3, Fruit, about natural size; 4, Male flower; 5, Section of same; 6, Section of perfect flower; 7, Ovary, style and stamens, calyx and petals removed; 8, Cross section of ovary; 9, Petals; 10, Stamens of male flower; 11, Stamens of perfect flower; 12, Calyx opened; all enlarged.

Note.—The fruits shown in the drawing are 1-carpelled only, the other carpels being abortive.

PLATE 90.

DOMBEYA NATALENSIS, Sonder.
Natural Order, STERCULIACEÆ.

A small tree with stem 1 foot in diameter, and grey-brown bark, branches terete, glabrous, twigs pubescent. Leaves alternate, petiolate, cordate at base, acuminate at apex, irregularly toothed on margin, veins palmate at base, prominent beneath, very minutely stellate pubescent on upper surface, glabrous beneath; 3–3½ inches long, 2–3 inches wide. Petioles 1–2 inches long, thickened at each end, pubescent. Inflorescence in axillary and terminal few or many flowered umbels, or flowers solitary; white. Peduncles filiform, 1–1¾ inches long, minutely pubescent, with 1, or more minute brown bracts at or below junction of pedicels; pedicels ½–1 inch long. Involucral leaflets 5, lanceolate, finely pubescent externally, inserted at base of calyx tube, and very soon deciduous, 2½–3 lines long, Calyx 5 parted, sepals lanceolate, reflexed, finely pubescent externally, 3 lines long, 1½ lines wide. Corolla of 5, ovate or obovate, unequal sided, erect, persistent and at length scarious petals, one third longer than sepals, 3–5 lines wide. Stamens 15–20, connate at base, of which 5 are sterile, elongate, and clavate, the fertile ones much shorter, 2–3 opposite each petal. Anthers linear, sub-sagittate, 2-celled, extrorse. Style simple, 5 cleft at apex, equalling or exceeding corolla. Stigmas 5, linear, spreading or revolute. Ovary tomentose, 3–5 celled, cells 2–4 seeded. Capsule globose, densely tomentose.

Habitat: NATAL: Coast and midland districts. Liddesdale, February, Wood; Zululand April, Wood.

Drawn and described from specimens gathered near Durban, May, 1899.

The genus Dombeya includes 24 or more species, all natives of Africa and the Mascarene Islands. In addition to D. natalensis we have 3 other species in Natal, the above-named one and D. Burgessieæ being almost, if not quite confined to Natal. All are handsome trees or shrubs, but except as ornamental plants they have no special value. The native name of D. natalensis is i-Boonda.

Fig. 1, Branch with leaves and flowers, natural size; 2, Section of flower; 3, Calyx, ovary, style and stigmas, petals removed; 4, Staminal tube opened, outside view; 5, Stamen; 6, Young fruit with remains of style; 7, Cross section of same; all enlarged.

PLATE 91.

ERIOSEMA PARVIFLORUM, E.M.
Natural Order, LEGUMINOSÆ.

A low growing much branched half shrubby plant, with yellow flowers. Stems erect, branching from near the base, the branches erect or ascending, and like the stem thickly covered with long pilose deflexed hairs, which are rusty brown in the older portions, white in younger ones. Leaves alternate, petiolate, stipulate, trifoliolate; common petioles 3 to 5 lines long, channelled above, swollen at base, petiolules of lateral leaflets 1 line long, swollen, of terminal one 2 to 3 lines long, swollen at apex. Leaflets varying in shape from ovate to oblong, elliptic, or obovate, ½ to 1½ inches long, 6 to 9 lines wide, terminal one 1 to 2 inches long, ½ to 1 inch wide, all entire, finely pubescent on both surfaces, veins

very prominent beneath, plainly visible above. Stipules lanceolate, red-brown, 3 lines long. Inflorescence in short axillary and terminal racemes, Peduncles much longer than leaves, pilose with reflexed white hairs, floriferous in upper third, flowers crowded, strongly deflexed. Calyx 5-fid, lobes acute, a little shorter than tube, the whole 1 to 1½ lines long, minutely pubescent, pedicels very short. Bracts lanceolate, equalling calyx. Corolla papilionaceous, petals sub-equal in length, 2 to 3 times longer than calyx; vexillum oblong with two inflexed auricles and a fleshy ring at base; alae narrow; carina obtuse, a little incurved. Stamens 10, diadelphous, 9–1. Style 1, glabrous, curved, stigma small, capitate, very densely pilose with white silky hairs. Legume strongly compressed, 4–6 lines long, 3 lines wide, obliquely oblong, hirsute, dark brown, 2-seeded.

Habitat: NATAL: Coast and midland districts. Inanda, February, J. M. Wood, No. 851; near Durban, Wood, October.

Drawn and described from specimens gathered near Durban, April, 1899.

The genus Eriosema contains upwards of 40 species, widely dispersed in tropical and subtropical regions. In Natal we have at least 6 species, none of which so far as we are aware have any economic value.

Fig. 1, Stem with leaves; flowers and legumes, natural size; 2, Flower, side view; 3, Calyx and staminal tube, petals removed; 4, Corolla A, vexillum, B, B, alæ, C, carina; 5, Calyx and young ovary; 6, Staminal tube opened; 7, Stamen; all enlarged; 8, Legume about natural size.

PLATE 92.

CROTALARIA CAPENSIS, Jacq.
Natural Order, LEGUMINOSÆ.

A much branched undershrub, 3–8 feet high. Stems and branches terete, pubescent, and with rough bark. Leaves alternate, petiolate, trifoliolate, stipulate, or stipules wanting; leaflets differing in shape from ovate to oblong, quite entire, obtuse and mucronulate at apex, tapering at base; terminal one ¾–2 inches long, ½–¾ inch broad, lateral ones ½–1 inch long, ⅜–½ inch wide; pubescent on both surfaces, veins prominent beneath. Petiolules very short and a little swollen. Common petiole ½–1¼ inches long, with a glandular swelling beneath at junction of secondary petioles, which are scarcely 1 line long. Stipules when present leaf-like, broadly ovate or obovate, entire, emarginate, stalked, reaching to ½ inch or more long, and pubescent like the leaves. Inflorescence in axillary or terminal many flowered racemes, which are much longer than the leaves, finally reaching to 6 inches or more in length, and then pendulous. Calyx gamosepalous, 6–7 lines long, widely spreading, lobes 5, sub-biliabate, upper lip 2-cleft, lower 3-cleft, all acuminate, externally minutely pubescent, green or purplish at base, limb a little longer than the tube. Bracts small, subulate. Corolla papilionaceous, vexillum ample, 1–1¼ inches long, ¾–⅜ inch wide, ovate, acute at apex, clawed at base, central vein prominent beneath, and thickened, lateral ones fine and close, with two hard prominent ridges on the claw which completely and firmly close the orifice at base of the staminal tube; the claw minutely tomentose at each side; alae oblong, clawed, the claw twisted, with numerous veins, and minutely pitted between them externally; 7–8 lines long; carina strongly falcate, longer than alae, acuminate. Stamens 10, monadelphous, the tube having a large opening at base,

which is closed by claw of the vexillum. Anthers dissimilar, 5 linear-oblong, 5 ovate. Style strongly falcate, hirsute beneath. Ovary stipitate, minutely pubescent. Legume much inflated, pubescent, many seeded; 1¾–2 inches long, 4 lines wide.

Habitat: NATAL: Coast and midlands common. Inanda. April. Wood No. 535.

Drawn and described from specimens gathered near Durban, May, 1899.

The genus Crotalaria has its name from a word meaning a castanet, on account of the seeds in the dry inflated pods when they become detached, giving out a rattling sound. The genus contains 120 or more species, widely distributed in the warmer parts of the world. In Natal we have 10 or 12 species, none of which are known to be of any commercial value. Some species yield a good fibre from their stems, such as C. juncea from which the "Sunn" hemp of India is obtained, and according to Baron Mueller C. retusa, and C. Burhia also yield a useful fibre. We are not aware that any of our indigenous species have been tested in this direction, and the only two that would be likely to be useful for this purpose, are the above described species and C. natalitia, Meisn.

Fig. 1, Branch with leaves, flowers and fruit, natural size; 2, Flower opened, A, standard, B, B, wings, C, keel; 3, Staminal tube; 4, Ovary and style; 5, Staminal tube opened; 6, Anthers, one of each kind; all enlarged. 7, Legume, natural size.

PLATE 93.

IPOMŒA CONGESTA, R. Br.
Natural Order, CONVOLVULACEÆ.

Roots cord-like, spreading and stoloniferous. Stems climbing, light brown, glabrous, and with numerous scattered tubercles, young ones green, thickly hirsute with setose hairs. Leaves alternate, petiolate, cordate, acuminate, often trilobate, the upper lobe oblong, acute or acuminate, lateral ones shorter and obtuse, the upper lobe varying much in length, the basal ones sometimes overlapping each other; 5–9 veined at base, thinly hirsute above, thickly villous beneath; 3–4 inches long, 1½–3 inches wide; petiole reaching to 5 inches long, terete, hirsute with retrorse hairs. Inflorescence axillary; of 1–4 or more flowers on a common peduncle. Calyx 5 parted, in two rows, the outer row of 3 ovate-acuminate sepals with numerous veins, pilose externally especially at base, minutely pubescent on upper surface, ciliate; inner two lanceolate, otherwise like the outer ones and equalling them in length; all 8-11 lines long, outer ones 4-5 lines, inner 2 lines wide. Bracts ovate-lanceolate, leafy, 9–12 lines long, 3–4 lines wide. Corolla salver-shaped, 2 inches long, 5 plaited, the plaits lighter in colour, the lamina blue-purple, fading to deep pink, tube light pink. Stamens 5, inserted at base of tube, filaments unequal in length, the longest equalling the tube, pilose at base. Anthers 2 celled, basifixed. Style equalling stamens, stigma indistinctly 3-lobed. Ovary pentagonal with rounded angles, flattened, normally 3-celled, cells 2-seeded, seeds trigonous, outer face convex.

Habitat: NATAL: Coast districts, not uncommon. Sydenham, September, Wood 4018.

Drawn and described from specimens gathered near Durban, May, 1899.

A handsome climber bearing large flowers which are bright blue in the morning fading to deep pink in the evening, or soon after being gathered. The genus Ipomœa is a large one including 3–400 species which are found in both tropical and temperate countries, none, however, being native of Europe. The roots and stems of I. congesta are used by the natives as an aperient medicine, and they call the plant i-Jalapa, but the true medicinal Jalap is obtained from I. purgans a native of Mexico, whether the above described plant will be fitted to take its place remains yet to be proved. Specimens of stems and roots have been sent Home for analysis. I. congesta is also a native of Australia. Several species of Ipomœa have similar properties, and others yield edible tubers, the common *Sweet Potato* being the tuber of I. Batatas, Poir.

Fig. 1, Stem with leaves and flowers, natural size; 2, Corolla opened; 3, Calyx, two sepals removed showing ovary, style and stigma; 4, Section through ovary; all enlarged. 5, Capsule in situ; natural size.

PLATE 94.

KALANCHOE ROTUNDIFOLIA, Harv.
Natural Order, CRASSULACEÆ.

An herbaceous plant with red flowers. Roots fibrous. Stem simple, or occasionally branching, terete, glabrous, green with indistinct greyish markings, 1–4 feet high, usually leafy in central portion only. Leaves opposite, decussate, petiolate, exstipulate, roundish-obovate, broadly oblanceolate, or spathulate, entire or crenulate, tapering at base to a flattened petiole, glabrous, thick and fleshy; 2–3 inches long including the short petiole, becoming gradually smaller and more distant upwards, the uppermost pair oblanceolate, and much smaller. Inflorescence cymose, the cymes simple, or twice or thrice branched, flat topped, the common peduncle $\frac{1}{2}$–3 inches long, secondary ones $\frac{1}{2}$ inch long, pedicels $\frac{1}{2}$–3 lines long; subglaucous. Corolla urceolate, the tube much swollen and sub-quadrangular in lower portion, strongly contracted above, limb 4-cleft, lobes oblong, acute, spreading, twisted in bud and after flowering, persistent, the whole corolla $\frac{1}{2}$ inch long, the tube 2 lines wide at base, $\frac{3}{4}$ line in narrow portion, bright red in upper part, gradually becoming green towards base. Stamens 8, in two rows; on corolla tube, all antheriferous. Filaments 3–4 times as long as the anthers. Anthers small, 2-celled, introrse, subsagittate. Carpels 4, compressed, rounded and bluntly keeled on outer surface, many seeded. Hypogynous scales 4, strap shaped, about half as long as the carpel, yellow. Styles subulate. Stigmas subglobose. Seeds minute, numerous. Follicles membranaceous, many seeded.

Habitat: NATAL: Edges of bush and open places in coast and midland districts. Inanda, Wood No. 236.

Drawn and described from specimens gathered near Durban, May, 1899.

In the description of this plant in the Flora Capensis Vol. 2, page 379, it is stated that Professor Harvey appears to be uncertain whether this is Haworth's plant or not, and we have no other description with which to compare it, but Wood's No. 236 was certified at Kew as being K. rotundifolia, and it is identical with the plant from which we have described, except in size, Wood's being a small specimen, but the plant differs much in this respect according to the locality in which it is grown. The natives do not seem to have any distinctive name for it, nor is it of any economic value.

Fig. 1, Plant about natural size; 2, Flower; 3, Flower, petals removed; 4, Corolla opened; 5, Stamen; 6, Section through ovary; all enlarged.

PLATE 95.

SENECIO TAMOIDES, DC.
Natural Order, COMPOSITÆ.

A climber with yellow flowers. Stems terete, glabrous and shining, copiously branching. Leaves alternate, petiolate, exstipulate, triangular in general outline, subcordate at base, acute at apex, unequally and coarsely toothed, with rounded interspaces, the lobules 2 to 5 on each side, usually broadly triangular, smaller upwards; veins pinnate, prominent and finely pubescent beneath; lamina dark green above, lighter and shining beneath, $1\frac{1}{2}$ to 3 inches long and wide. Petioles usually curved, channelled above, 1 to $2\frac{1}{2}$ inches long. Inflorescence in loose many flowered corymbs, which are terminal on the branches. Pedicels slender, $\frac{3}{4}$ to $1\frac{1}{2}$ inches long. Involucre of 5–8 scales which are connate in a cylindrical tube for nearly their whole length, acute and minutely dark tipped at apex and with glandular swellings at base, 3–$3\frac{1}{2}$ lines long. Ray florets 3-6, usually 5, unilabiate, spreading, the ray oblong, 3-5 lined, equalling involucre. Style arms slender spreading. Stamens O. Disk florets tubular, 5-toothed, their styles strongly recurved. Pappus copious, bristly, serrate, white. Anthers linear, tipped with an ovate, membranous appendage. Achens cylindrical, glabrous.

Habitat: NATAL: Coast and midlands common; without locality or date, Gerrard and McKen, 331 ? Inanda, Wood 573.

Drawn and described from specimens gathered near Durban, May, 1899.

A wide climbing plant bearing large trusses of bright yellow flowers. It flowers about May and remains in flower for some weeks during which time it is a very conspicuous object. The flowers are frequently attacked by an insect which forms a gall within the flower head, this gall is firmly seated on the receptacle, terete in section, tapering to each end, green and quite glabrous, much longer than the head, and each contains a single larva.

Fig. 1, Flowering branch, natural size; 2, Flower head; 3, Disk floret; 4, Staminal tube opened; 5, Ray floret; 6, Pappus bristle; all enlarged.

PLATE 96.

MONSONIA BIFLORA, DC.
Natural Order, GERANIACEÆ.

Annual, much branched. Stem half woody, short, copiously branching from just above the base. Branches ramifying in all directions, and procumbent, finely pubescent, occasionally with a few pilose hairs. Leaves crowded together at the nodes, or in false whorls, stipulate, oblong to linear-oblong, serrate, crenate or irregularly toothed, hispid; $\frac{1}{4}$ to $1\frac{1}{4}$ inches long, $1\frac{1}{4}$ to 4 lines wide Petiole slender, $1\frac{1}{2}$ to 6 lines long. Stipules several together, pungent, pilose; 2-4 lines long. Peduncles axillary and terminal, solitary, or two on a common peduncle, in our specimens usually 1-flowered, and without bracteoles in centre of peduncle, hispid; $\frac{3}{4}$ to $1\frac{3}{4}$ inches long. Sepals 5, linear-oblong, or subspathulate, acuminate and tipped with a long slender bristle, externally pilose; 3 lines long. Petals 5, free, hypogynous, imbricate, delicate in texture, creamy white with dark veins, one

third longer than sepals. Stamens 15, shortly connate at base, and afterwards cohering in 5 parcels, each parcel opposite a petal, the central stamen of each parcel usually, but not always the longest. Anthers ovate, 2 celled, introrse. Ovary of 5 one seeded carpels cohering round an awl shaped torus, to which their styles adhere, separating at maturity. Stigmas 5, filiform, spreading or recurved. Carpels 5, pilose, 4 to 5 lines long, tails $1\frac{1}{2}$ to $1\frac{3}{4}$ inches long, with long bristles at base within, the bristles gradually shorter upwards, hispid externally.

Habitat: NATAL: Uplands, to 5-6,000 feet above the sea-level. Weenen County, December, Wood 3,507; Charlestown, March, Wood 6,311.

Drawn and described from the Charlestown specimens.

The above described plant and M. ovata, Cav. have been known for a long time as remedies for diarrhœa and dysentery, and have lately been more prominently brought into notice in consequence of a paper in the "Lancet" by Dr. Maberly, M.R.C.S., in which he gives a tabular statement of 100 cases treated with a tincture of this plant, or of M. ovata, and in which he was successful in nearly every case. In response to a request from England a quantity of the plants equal to a sack full were sent to England, having been collected near Charlestown by Mr. J. M. Wood, and we are now informed that the plant is under trial in the military hospitals in India, but no report as to its success or otherwise has reached us.

The genus Monsonia includes 12 or 13 species, most of which are found in S. Africa, some, including the above named one, reaching to Tropical Africa, others to N. Africa, and one is found in Tropical Asia.

Fig. 1, Plant natural size; 2, Section through flower; 3, Staminal tube opened; 4, Stamen; , Stamens and style, calyx and corolla removed; 6, Carpels in situ; 7, Carpel detaching; 8, Cross section of ovary; all enlarged.

PLATE 97.

MONSONIA OVATA, Cav. var biflora, E. & Z.
Natural Order, GERANIACEÆ.

Erect from a woody root. Stems slender, sparingly branching, terete, more or less pilose with long white hairs, sometimes conspicuously so; 4 to 15 inches long. Leaves crowded at nodes, or in false whorls, petiolate, stipulate, oblong or linear-oblong, finely and sharply toothed or sub-entire, acute or obtuse at apex, tapering to both ends, usually entire in lower portion, pubescent or pilose, veins conspicuous beneath; $1\frac{1}{2}$ to $1\frac{3}{4}$ inches long, $\frac{1}{4}$ to $\frac{1}{2}$ inch wide, in the dried state folded together. Petiole slender, $\frac{1}{2}$ to $\frac{3}{4}$ inch long, pubescent. Stipules subulate, several together, pubescent, 2 to 5 lines long. Peduncles solitary, axillary and terminal, 4-bracteate in the middle, 1 or 2 flowered, peduncles and pedicels slender, 1 to $2\frac{3}{4}$ inches or more long. Sepals 5, oblong-lanceolate, acuminate, with a long bristle-like mucro, pilose with long white hairs, erect; $\frac{1}{2}$ inch or more long. Petals 5, free, hypogynous, imbricate, very delicate in texture, white with fine, dark veins, nearly or quite twice as long as sepals. Stamens 15, shortly connate at base, and afterwards cohering in 5 parcels of 3, each opposite a petal. Ovaries, carpels, and styles like those of M. biflora. (Plate 96.)

Habitat: NATAL: Coast to at least 2,000 feet above sea level. Coast, September, Wood 310; Ndwedwe, July, Wood 948; Inanda, March, Wood 896; Palmiet, December, Wood 7503.

Drawn and described from the Palmiet specimens.

In a report on Wood's 310 from Kew, this plant is said to be M. biflora, Cav, but not the typical form, and in a later report on Wood's 896, it is said, "Seems to be intermediate between M. biflora, DC, and M. ovata, Cav." It appears, however to us to correspond fairly well with Ecklon & Zeyher's plant so far as we are able to judge from the short description given in the "Flora Capensis," but we have no authentic specimen with which to compare it. The flowers vary in size, and are sometimes 3 to 4 times as large as those of M. biflora, DC, but all the measurements have been made from dried specimens.

It is most likely that this plant has the same properties as M. biflora, and M. ovata of the Cape Colony, Transvaal and Free State, but so far as we are aware it has not been tested in any way.

Fig. 1, Plant natural size; 2, Section through flower; 3, Flower, calyx and corolla removed; 4, Staminal tube opened; 5, Stamen; 6, Carpels in situ; 7, Same, a carpel detaching; 8, Section through ovary; all enlarged.

PLATE 98.

CHLOROPHYTUM HAYGA'THII, Wood & Evans.
Natural Order, LILIACEÆ.

Root fibres cylindrical, fleshy, 3-4 inches long. Radical leaves 5 to 8, broadly linear, very firm in texture, old ones breaking up into numerous fibres at base; 8 to 12 inches long, 4 to 7 lines wide, narrowing gradually to both ends, finely ciliate, otherwise glabrous, with 30 to 40 close prominent ribs. Stem-leaves much smaller, gradually decreasing in size upwards, sheathing at base. Peduncle stout, terete, simple, 4 to 6 inches long to base of inflorescence, pubescent in upper portion, glabrous below. Raceme 6 to 9 inches long, many flowered. Bracts 2 to each flower, outer broad-based, long-acuminate, scarious, 10 to 13 lines long, 4 to 5 lines broad; inner much shorter, lacerate at apex. Pedicels erecto-patent, 1 line long, solitary. Perianth, white with green stripe, 7 lines long, oblong, segments narrowing to apex, keels 3-ribbed. Stamens 6, a little shorter than perianth. Capsule ovoid, triquetrous with obtuse angles. Seeds numerous.

Habitat: ZULULAND: Nkandhla, December, 1898, Haygarth. (Wood No. 7448.)

Drawn and described from the specimens gathered by Haygarth as above.

Amongst South African species this comes nearest to C. vaginatum, Baker, is more robust but not so tall, the racemes are longer, the bracts and perianth much longer, leaves are more distinctly ribbed, and firmer in texture, and the flowers are different in colour. So far as known to us it has only been collected in the above named locality.

Fig. 1, Plant natural size; 2, Section through flower; 3, Upper and lower bracts; 4, Petal; 5, Stamen; 6, Section through ovary; 7, Portion of peduncle with ripe capsules in situ; all enlarged.

PLATE 99.

GLADIOLUS PSITTACINUS, Hook, var Cooperi, Baker.
Natural Order, IRIDEÆ.

Corm globose, 1¼ to 2 inches diameter, tunics chartaceous, broad, ultimately breaking up into fibres. Produced leaves 6 to 8, ensiform, rigid in texture, 2 to 3 feet long, ¾ to 1½ inches broad. Stem 3 to 4 feet long, including the inflorescence. Spike very lax, 1 foot or more long. Spathe valves yellow-green, oblong-lanceolate, 2 to 2½ inches long. Perianth tube strongly curved, 2 to 2½ inches long, subcylindrical, very gradually widening from base, limb a little shorter than tube, 6-lobed, 3 upper segments hooded, ovate or obovate, acute, tapering to base, ¾ to 1 inch broad, crimson externally, lighter within; 3 lower ones much smaller, central one broadly lanceolate, crimson with yellow markings in upper half, canary yellow in lower half, 1¼ to 1½ inches long, ½ to ¾ inch broad; lateral ones lanceolate, yellow with faint crimson tinge at tip, ¾ to 1 inch long, 4 to 5 lines wide, all strongly recurved. Stamens 3, a little shorter than upper segments, on corolla at base of tube, filaments filiform. Anthers linear, basifixed, sagittate at base, acute at apex, 2-celled, 6-7 lines long. Style filiform, tapering to apex, curved. Stigmas 3, filiform, spreading. Ovary inferior, 3-celled, cells many seeded. Capsule oblong, loculicidally 3-valved; ¾ to 1 inch long. Seeds discoid, winged.

Habitat: ZULULAND: Coast districts. Delagoa Bay, Wood No. 5634.

Drawn and described from specimens which were brought from Zululand by Mr. W. Slatter, and which flowered, May, 1899.

In the Flora Capensis, Vol. VI., page 158, this plant is described under the above name, and a specimen of Wood's 5634, which was sent to Kew was certified as being this plant. The difference given between the type and the variety are, that in the type the perianth tube is 1½ to 2 inches long, in the variety 2½ to 3 inches, and also that in the variety the segments are more acute. We find further that the manner of propagation is somewhat different, in the type bulbils are produced close to the parent bulb, while in this variety they are produced at the ends of filiform runners, reaching to a foot or more in length, sometimes producing other bulbils beyond them. The plant thus increases rapidly, and in a few years forms a dense mass of stems, which flower profusely, from April to June. It is the only Gladiolus which succeeds really well in the Durban Botanic Gardens.

Fig. 1, Plant divided, showing manner of propagation, flowers and leaves, about natural size; 2, Section through flower; 3, Flower opened; 4, Stamen, front and side view; 5, Stigmas; 6, Section through ovary; all enlarged.

PLATE 100.

ALOE SAPONARIA, Haw.
Natural Order LILIACEÆ.

Stem 3 to 12 inches long. Leaves 12 to 20 in a dense rosette, lanceolate from a broad base; 4 to 12 inches long, 1 to 2½ inches wide at the base, ¼ to ¾ or more inches thick in centre at base, dull green with darker lines and rows of indistinct whitish blotches above, lighter green with dark lines beneath, margin with deltoid-cuspidate, reddish brown, straight or curved pricles, 1 to 2 lines long, 3 to 5 lines apart. Peduncle simple, or more usually forked, with a few scattered filiform empty bracts springing from a broad base; glabrous and shining, dark brown,

glaucous towards base. Racemes densely many flowered at apex of peduncle and its branches, lengthening with age; flowering portion, 3 to 5 inches long and broad, lower pedicels 1 to 2 inches long; flowering bracts deltoid-cuspidate, up to 1 inch long. Perianth $1\frac{1}{2}$ to $1\frac{3}{4}$ inches long, dull red, orange or yellow, tube constricted 3 lines above the ovary, flattened beneath, and swollen laterally, cylindrical above, and a little widening upwards. Segments 6, in two rows, free for half to two-thirds of their length, oblong, obtuse at apex, 4 to 5 lines long, 3 lines wide at base. Stamens 6, hypogynous, at maturity equalling or exceeding the corolla, filaments filiform, flattened, wider at base, the alternate ones slightly wider than the others. Anthers linear, basifixed, 2-celled, 2 to 3 lines long. Ovary superior, cylindrical, ribbed, 3-celled, many ovuled. Style filiform. Stigma minute, exserted. Capsule inflated, many seeded, 3-lobed at apex, 6 lined, 1 to $1\frac{1}{4}$ inches long, 6 to 8 lines wide.

Habitat: NATAL: All over the Colony. Red flowered variety, near Durban, Wood 4343; Yellow flowered variety near Durban, Wood 4341; Thorns near Weenen, Wood.

This is perhaps the most widely distributed species of Aloe that we have in the Colony, reaching from close to the sea, to 3-4,000 feet above the sea level. The two varieties appear to differ only in the colour of the flowers. The leaves of these plants split open and applied to inflamed sores, or to ring-worm, are said to be of great service in effecting a cure. It is known to the natives as i-Cena.

The faint marking in centre of the leaf as shown in the drawing is caused by the pressure of the edge of another leaf and its prickles when in the young state.

Fig. 1, Peduncle, raceme and portion of leaves, upper and under side, a little reduced; 2, Section through flower; 3, Stamens and style, perianth removed; 4, Ovary, style and stigma; 5, Perianth opened, all natural size; 6, Stamen; 7, Section through young fruit; all enlarged.

NOTE.

PLATE 15.—Ipomoea simplex, Thb. The plant here figured has been known in Natal by this name for many years. Thunberg's I. simplex, however, has "elliptical" not linear or linear-oblong leaves, and has so far as known to us only been found in the Western Province of the Cape Colony. The plant figured on Plate 15 is Ipomoea plantaginea, (Choisy) Hallier f, that is, it was first described by Choisy as Convolvulus plantagineus, since altered by Hallier. f to I. plantaginea, which is the correct name.

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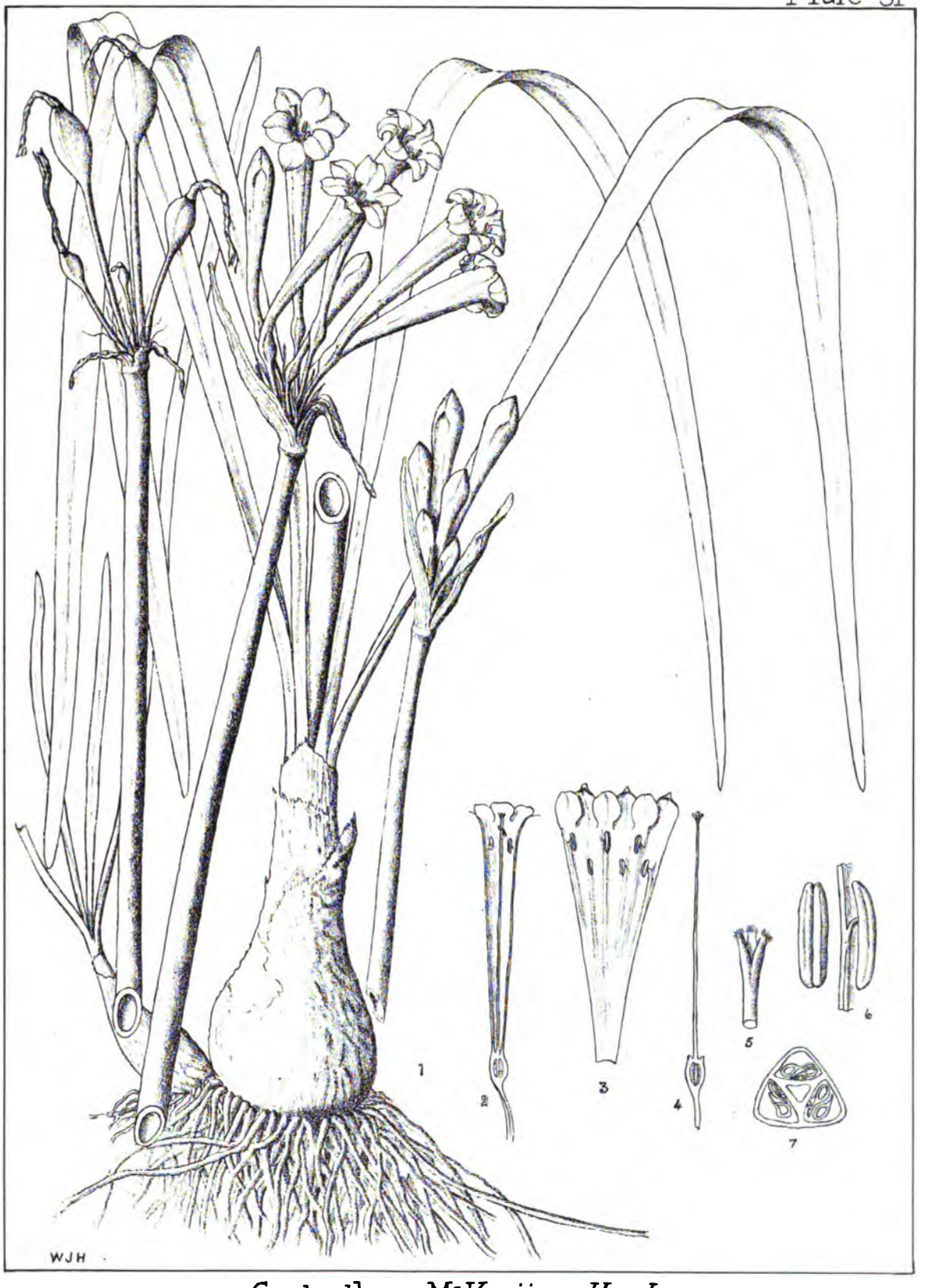

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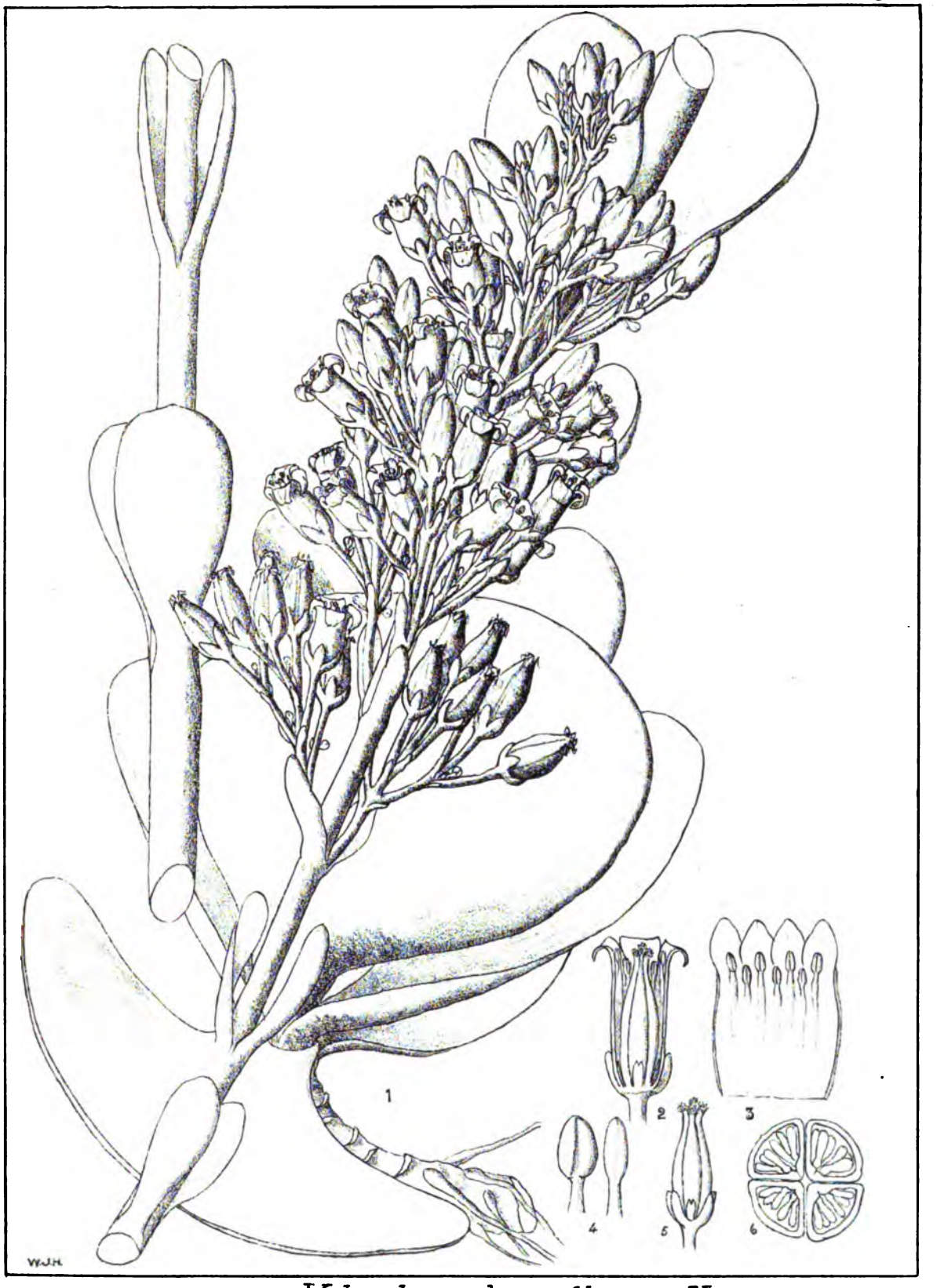

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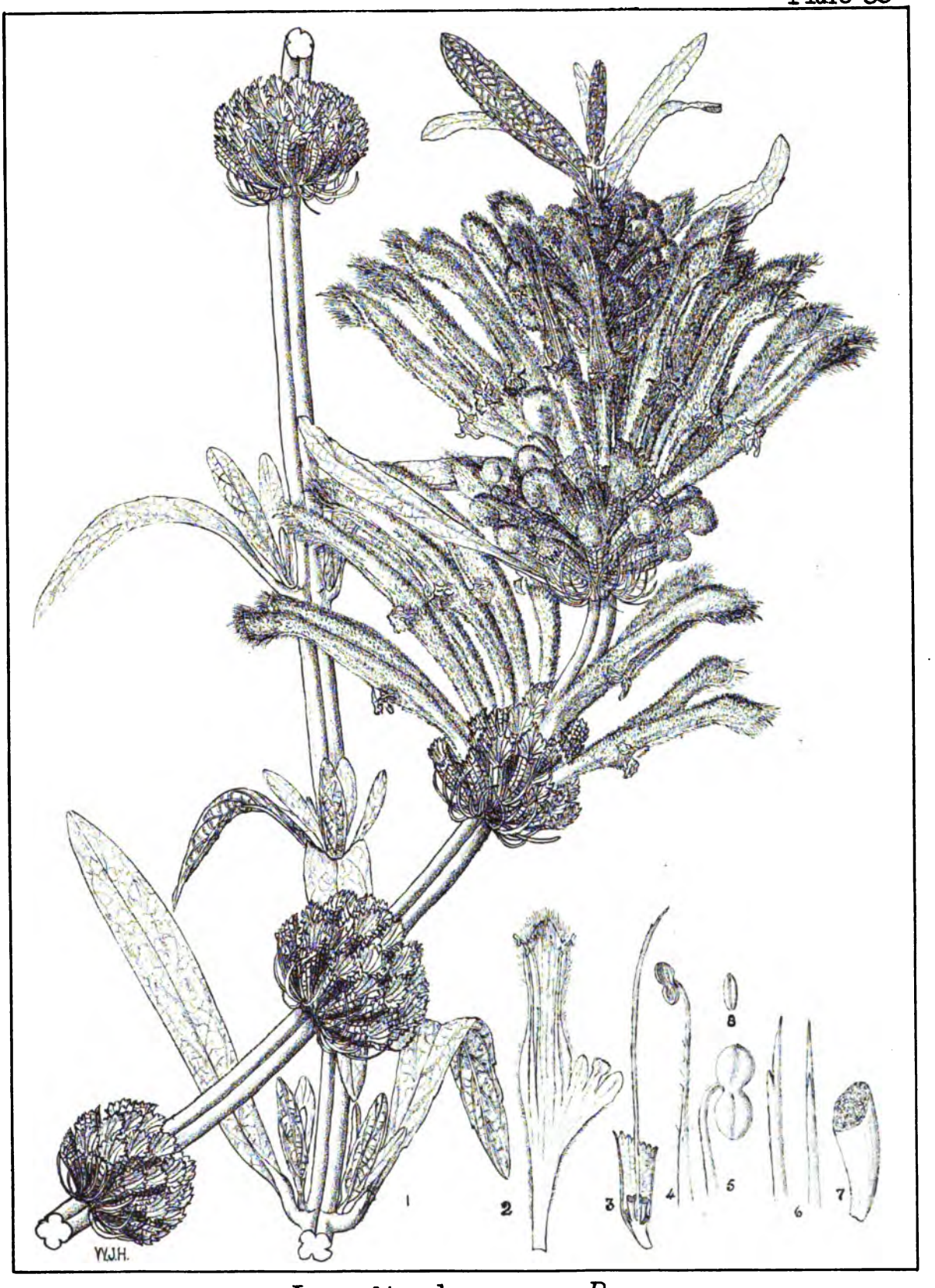

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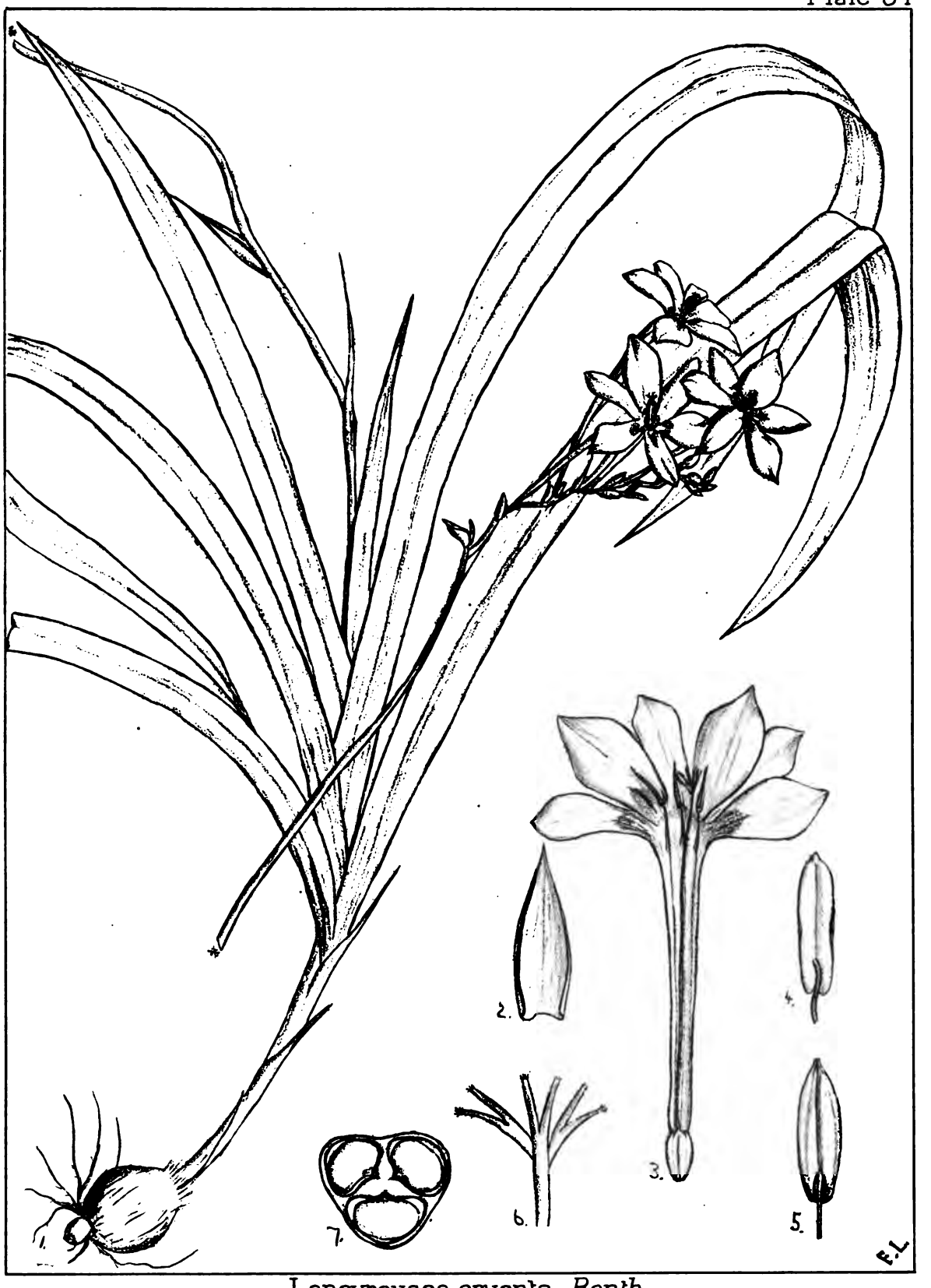

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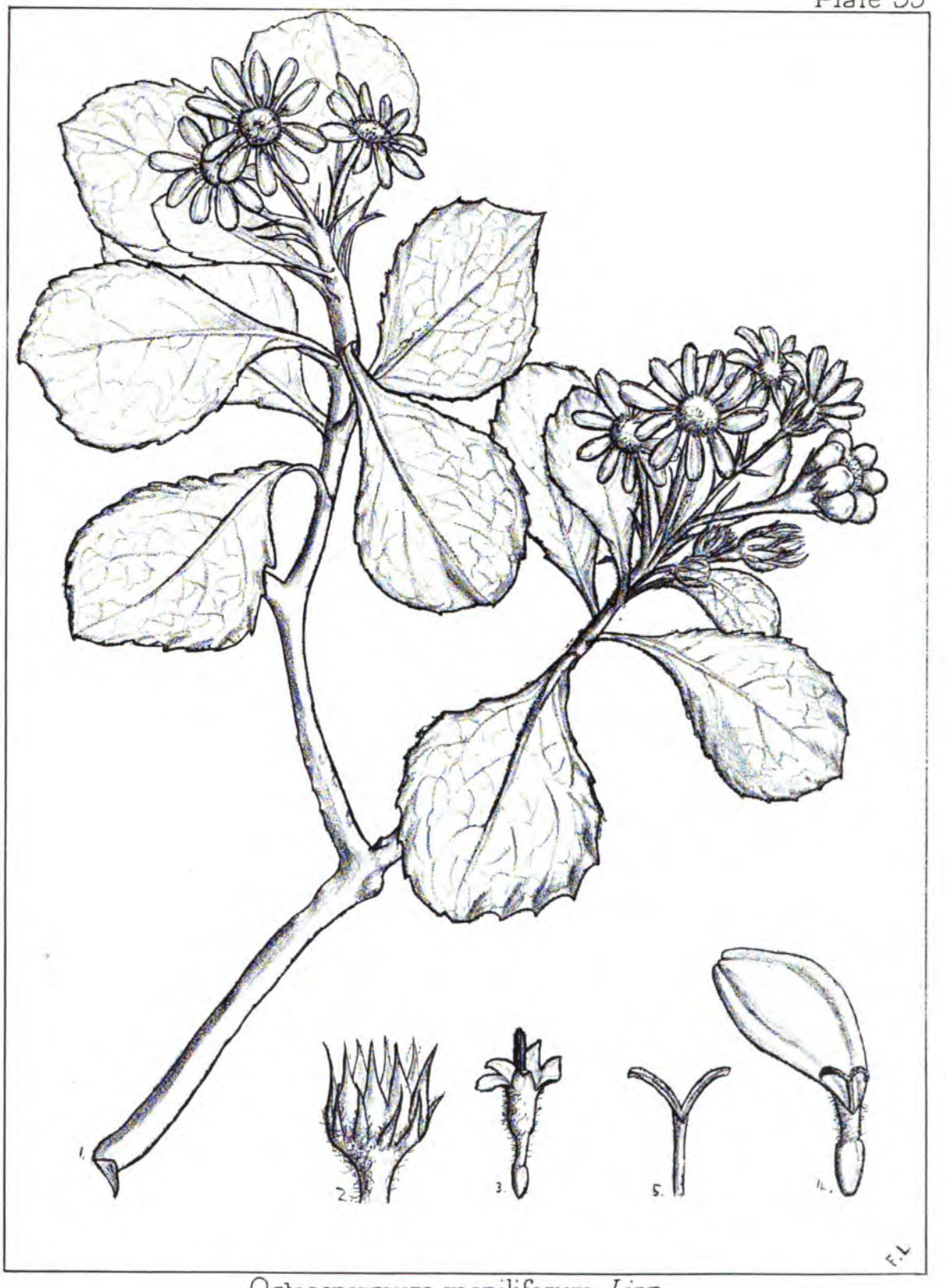

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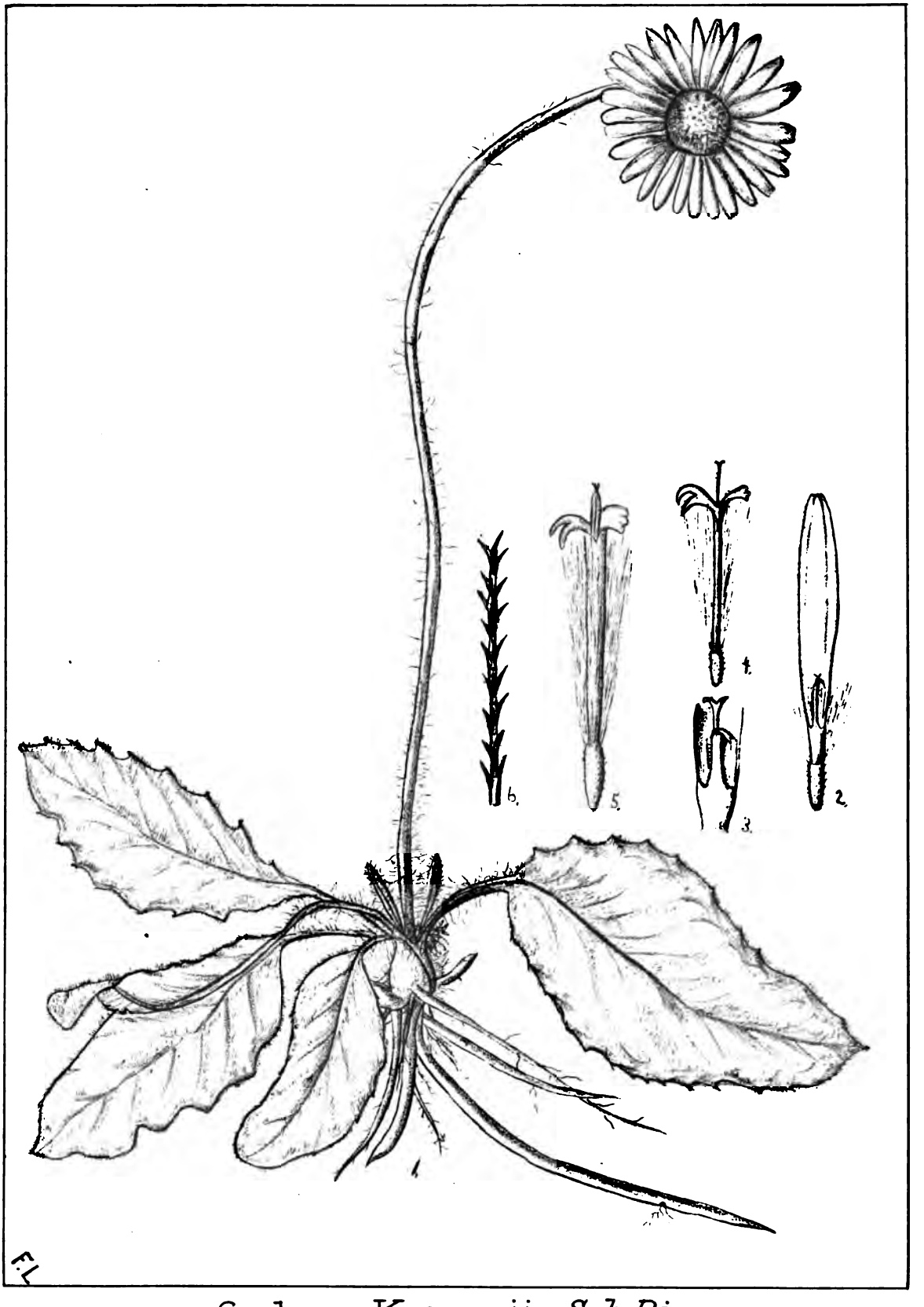

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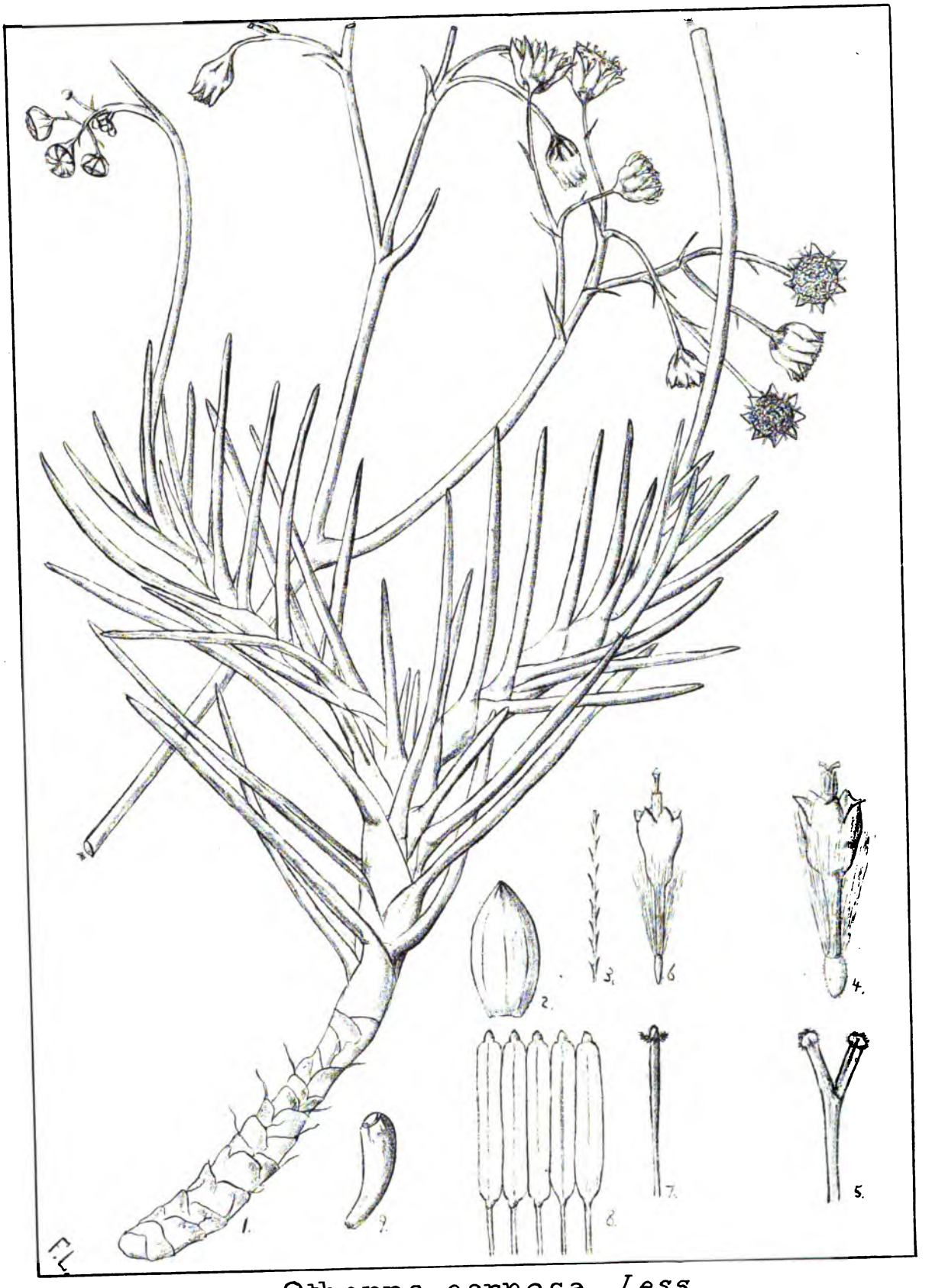

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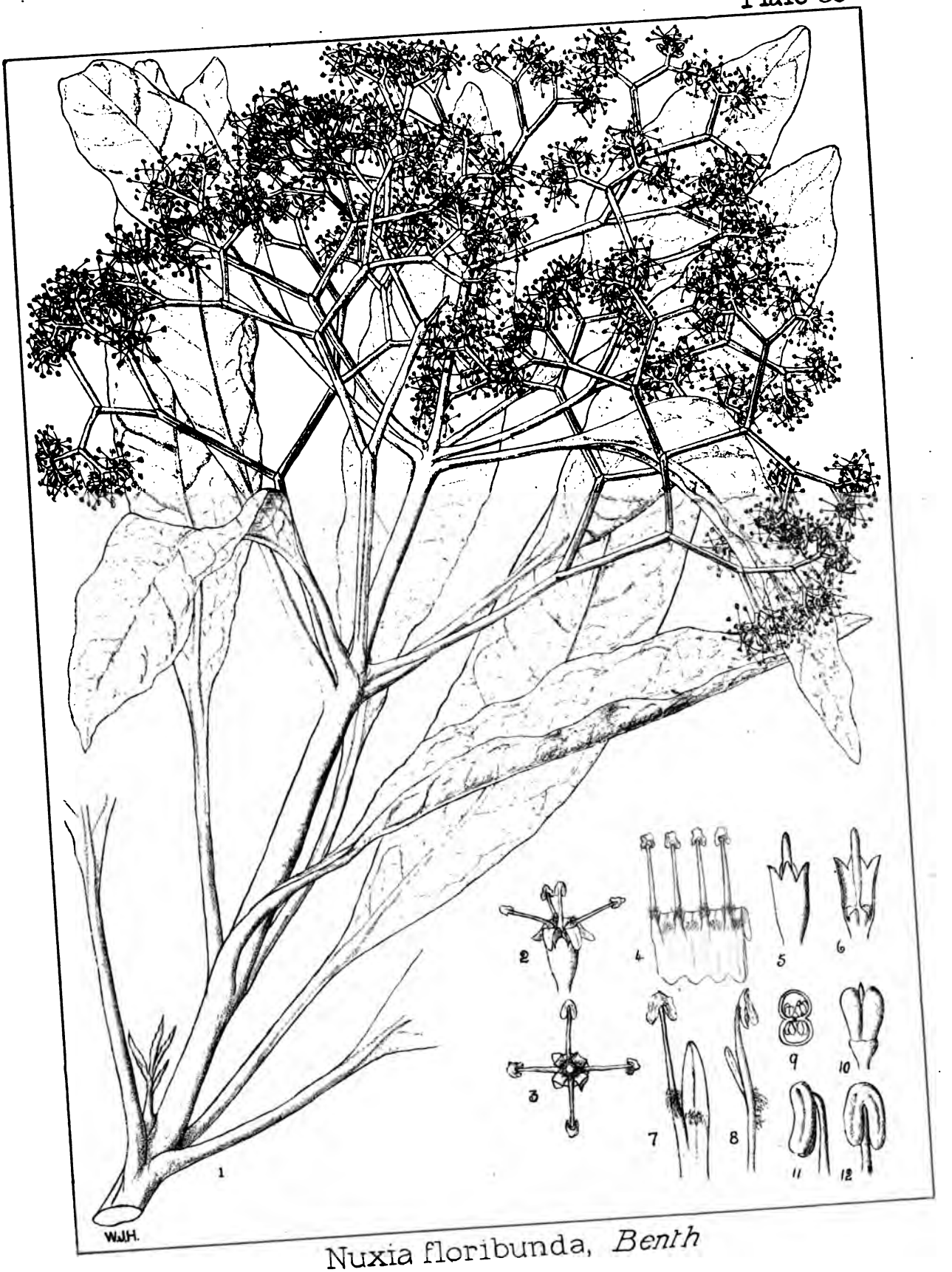
var discoidea. *Oliv*

Haemanthus natalensis, *Pappe*



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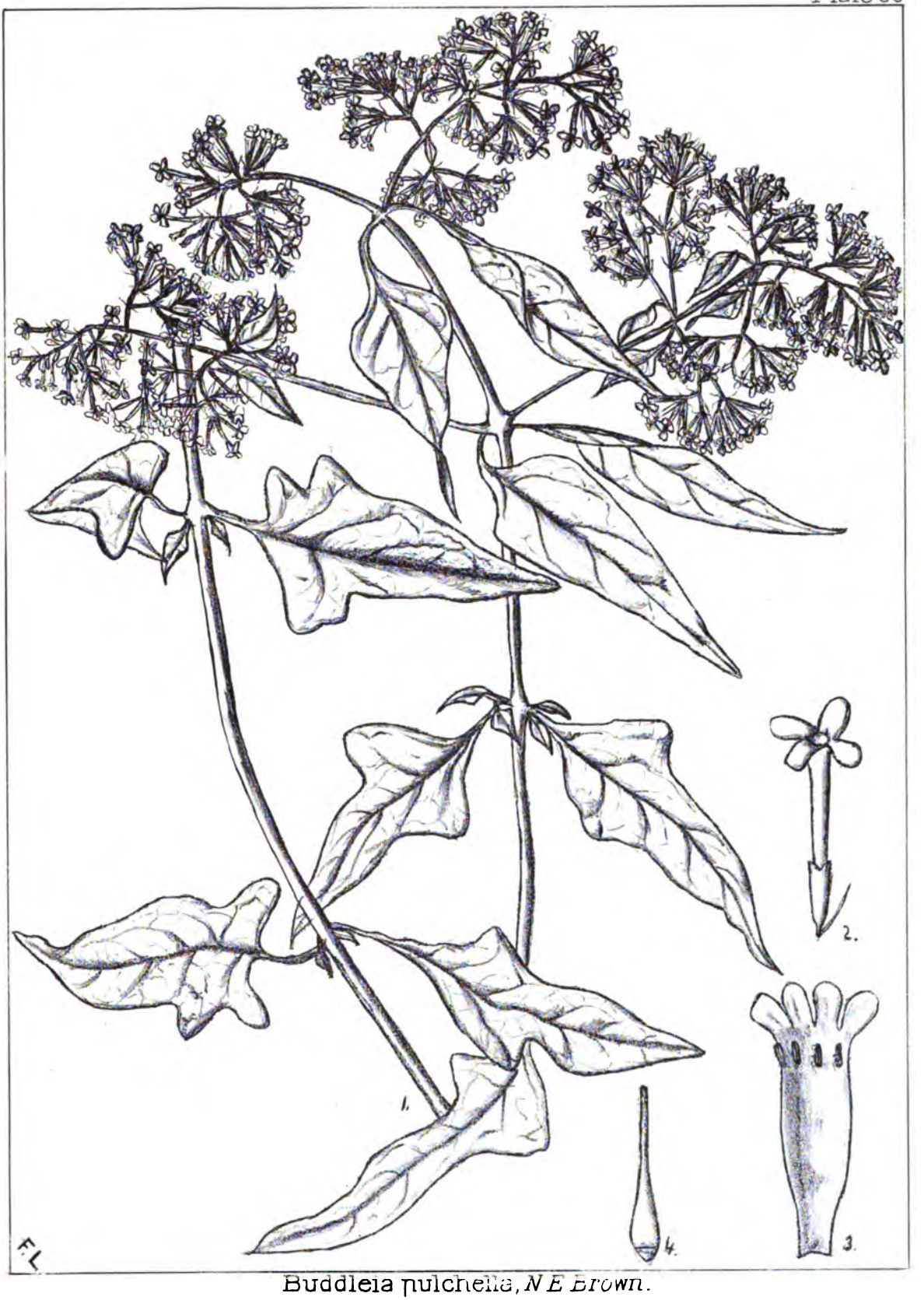

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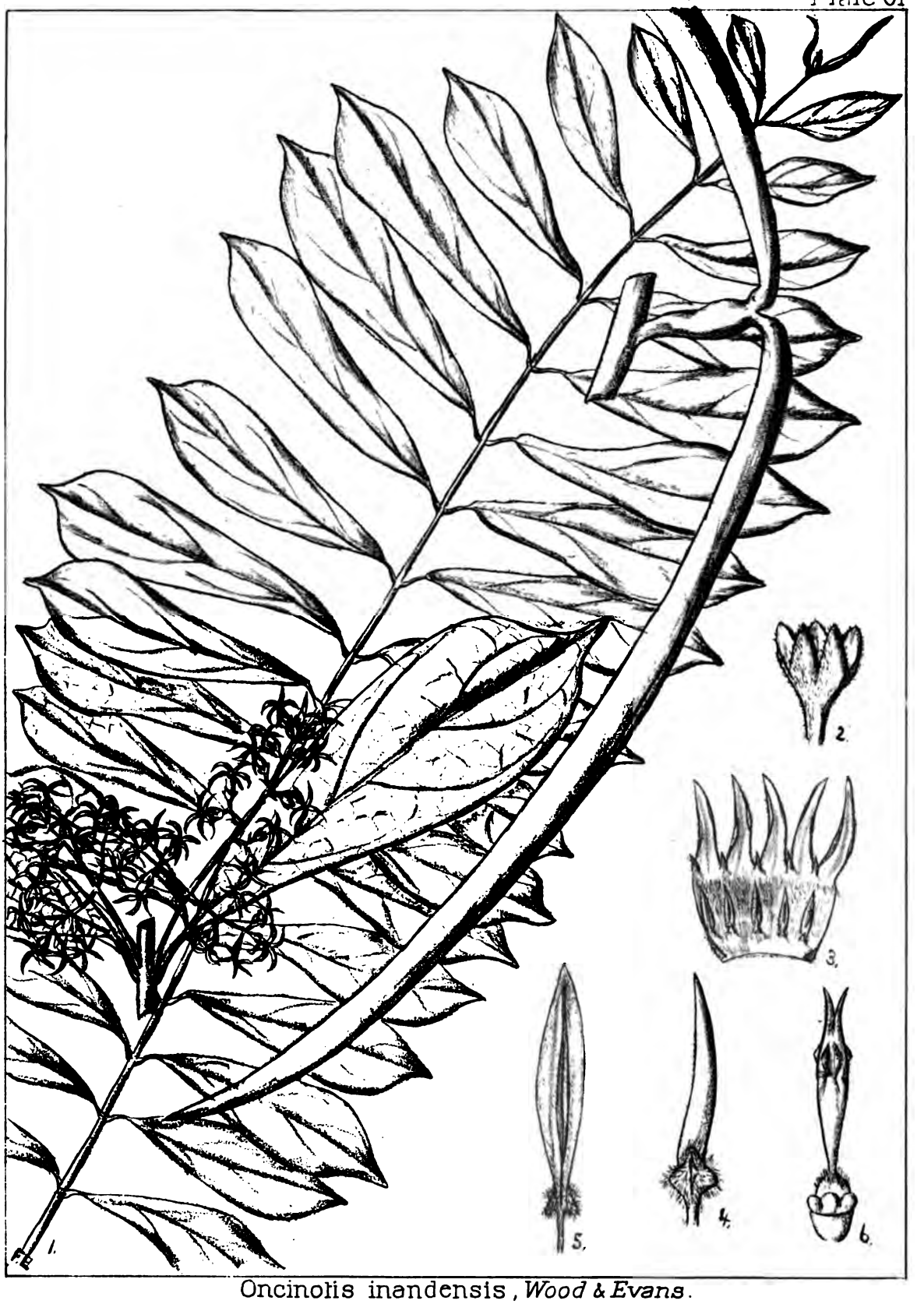

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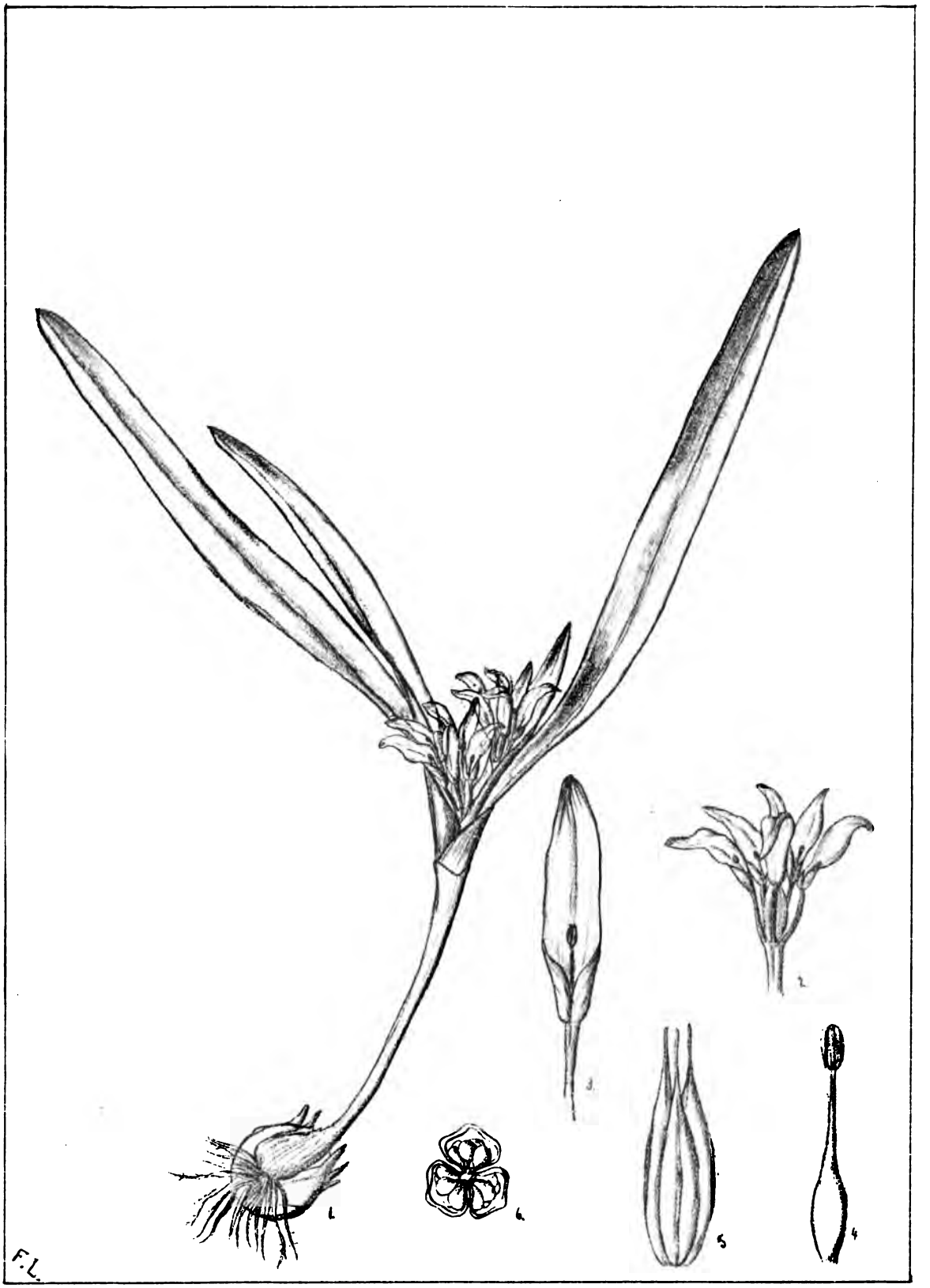
Othonna natalensis, *Sch Bip*.



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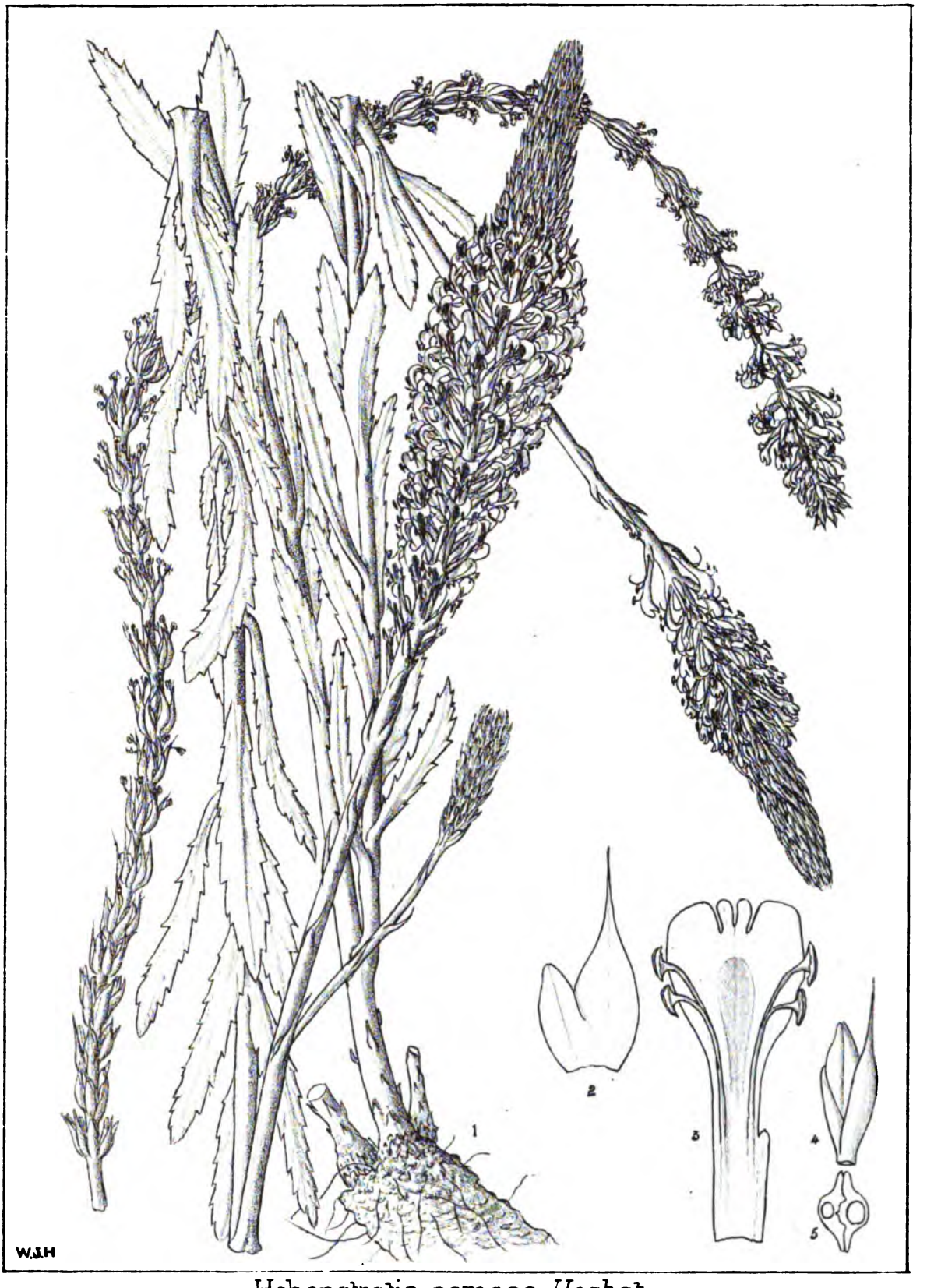

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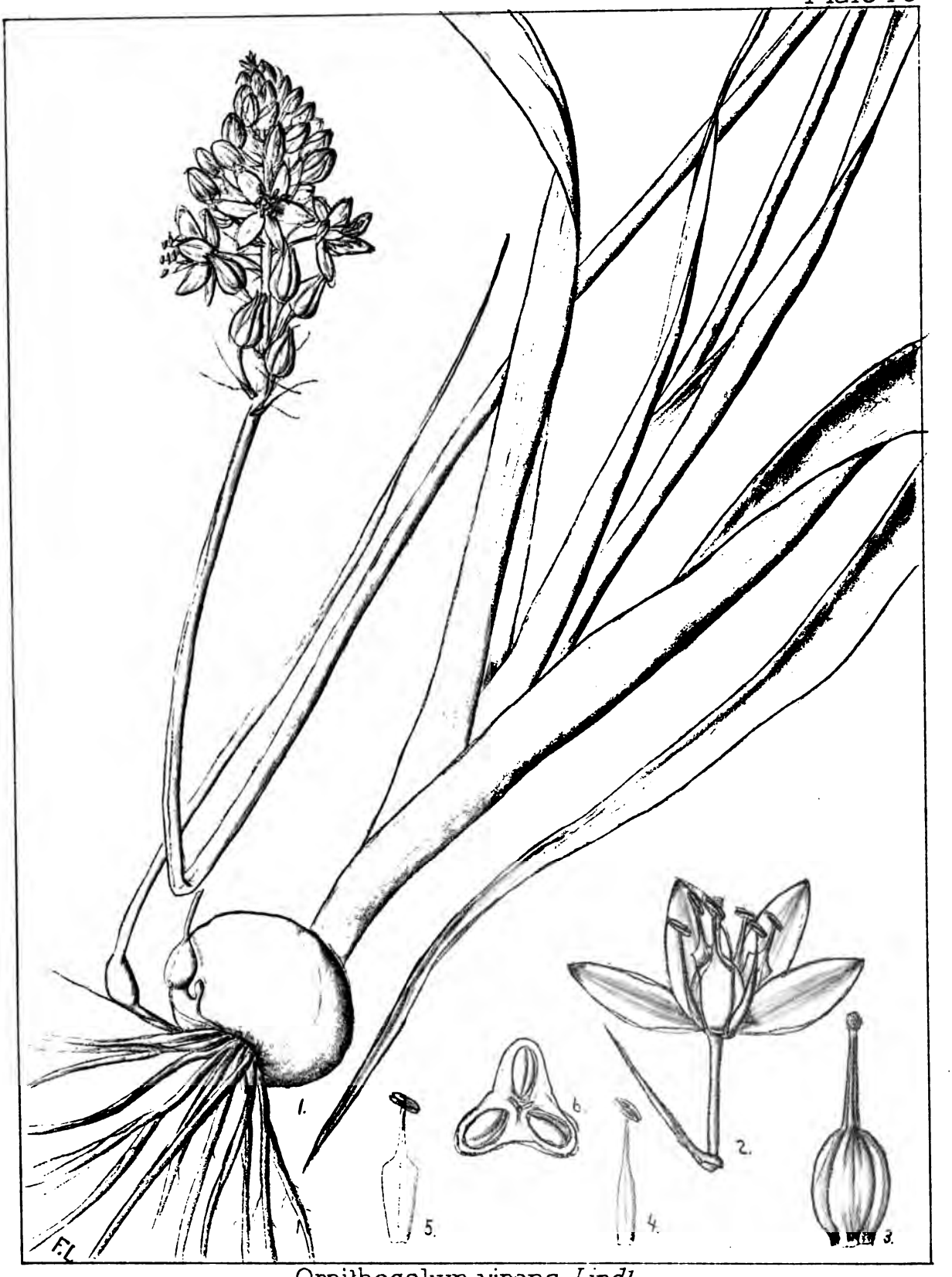

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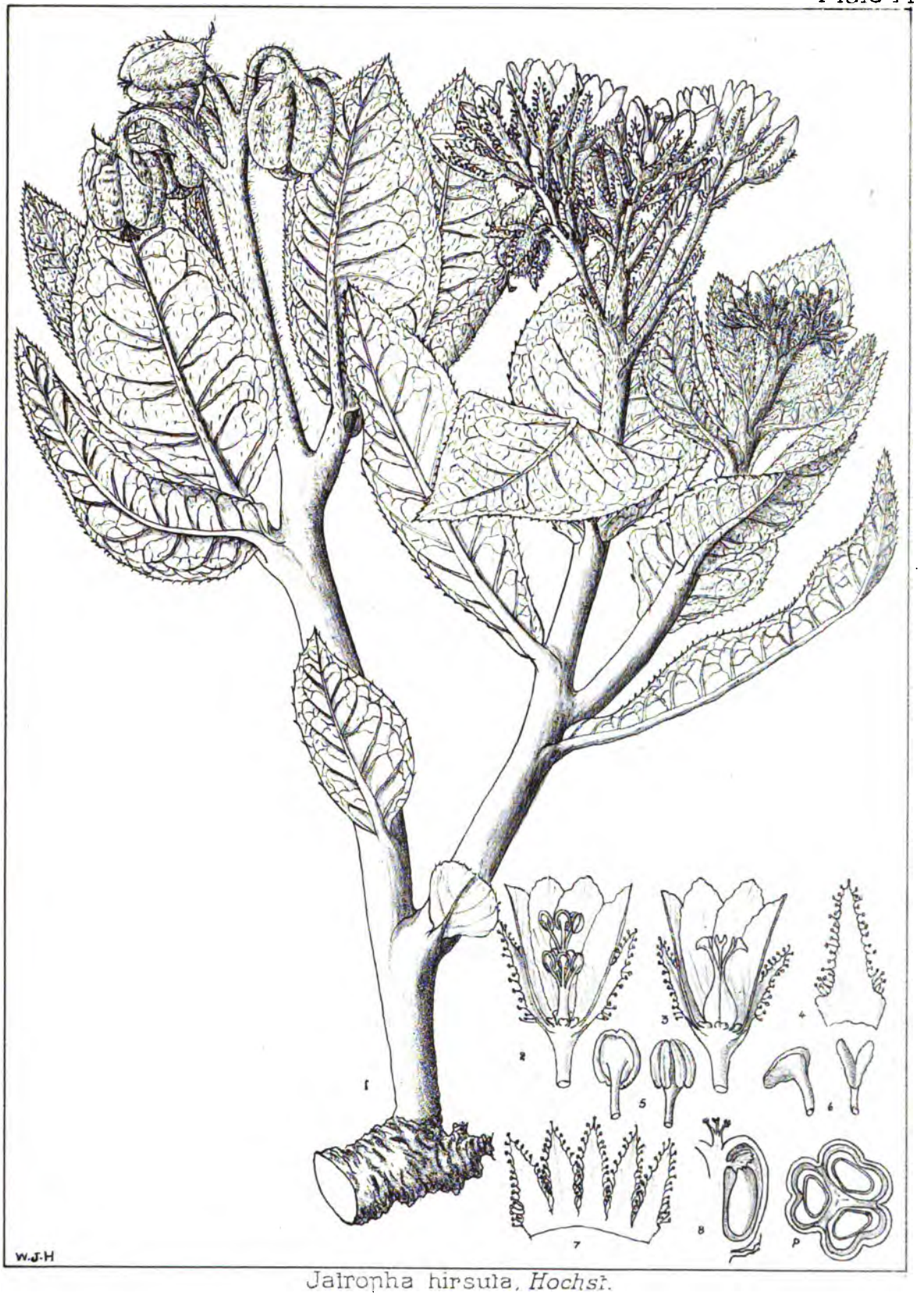

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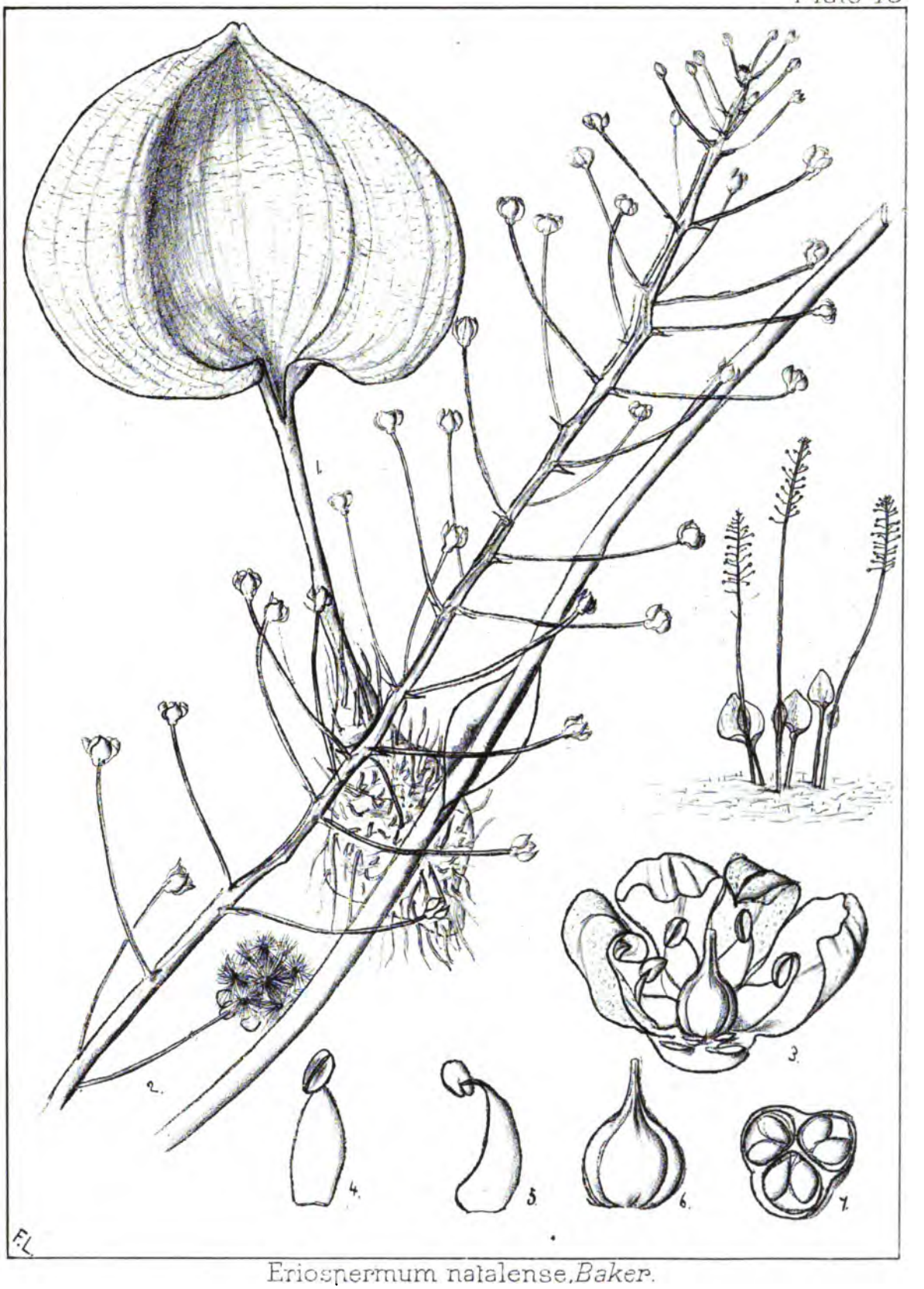

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Acokanthera speciabilis, *Hook.*

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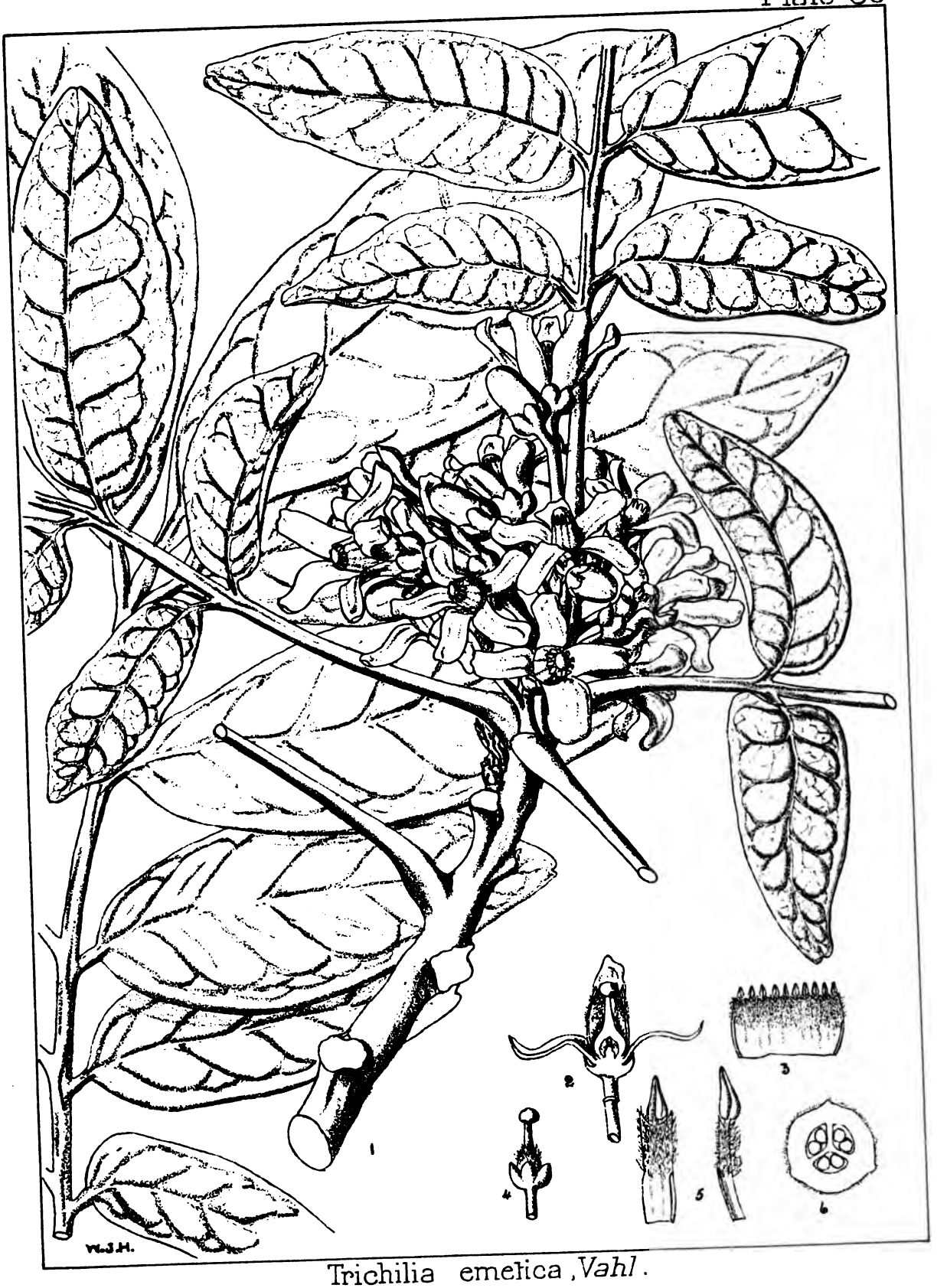

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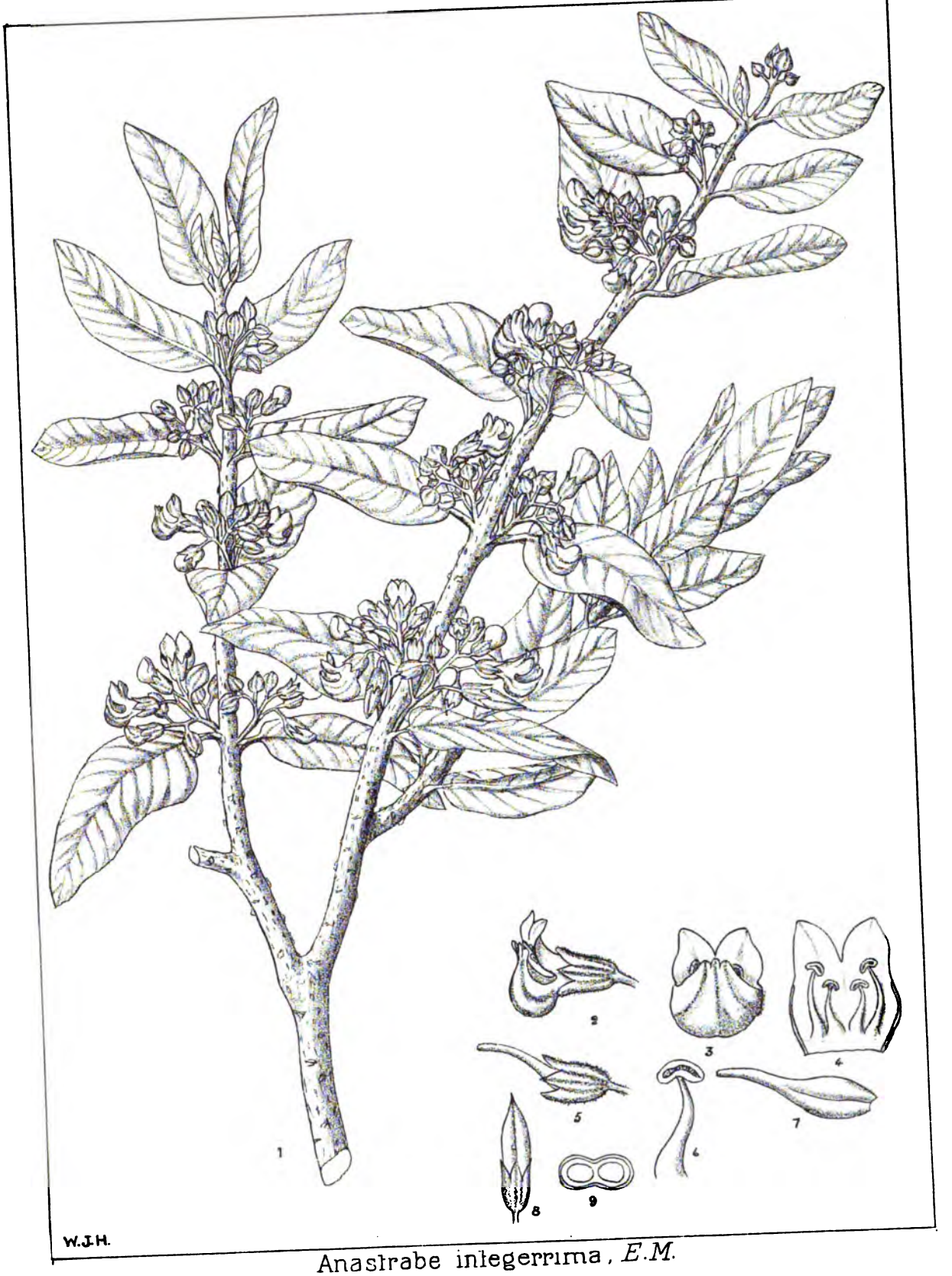

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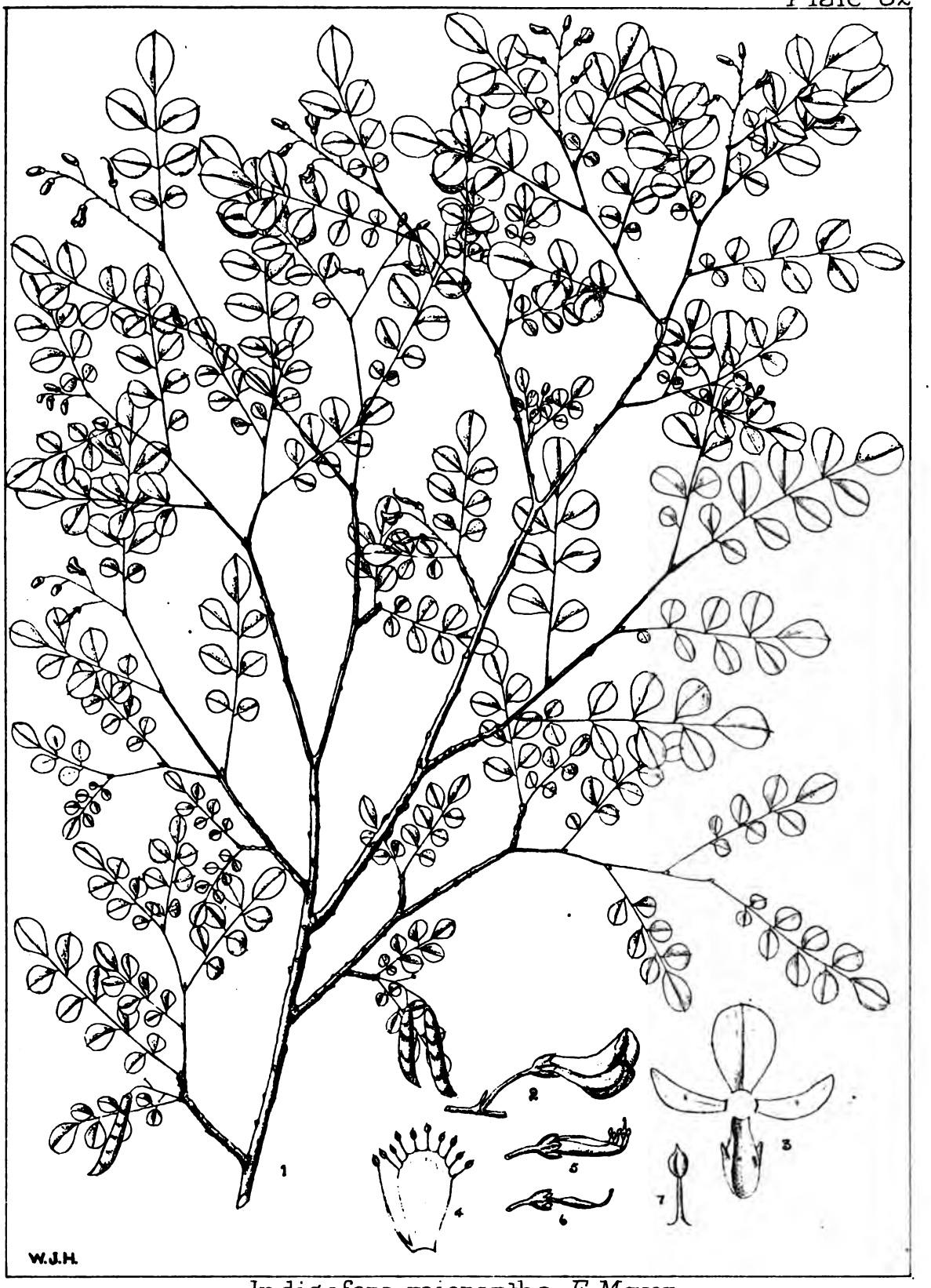

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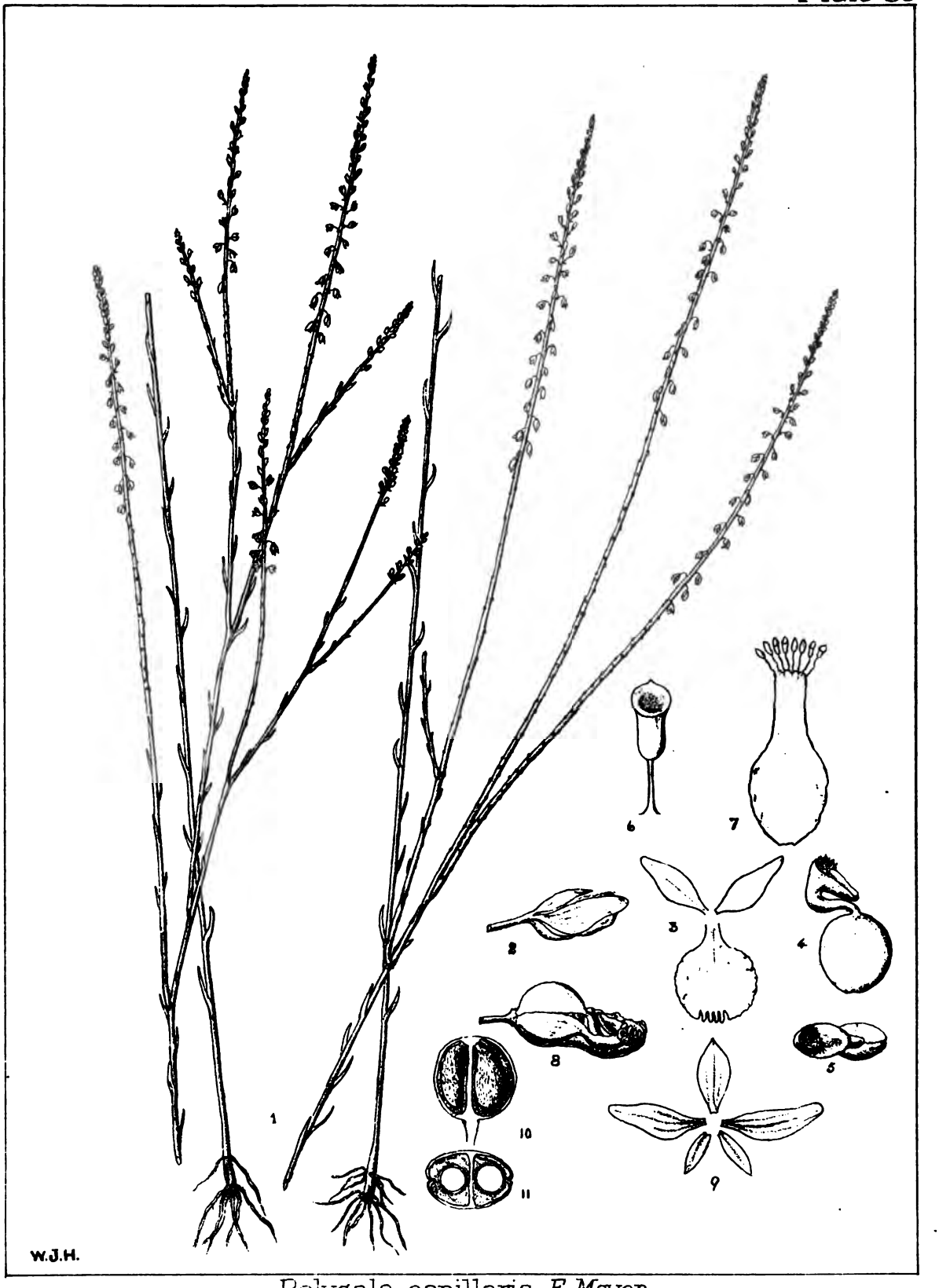

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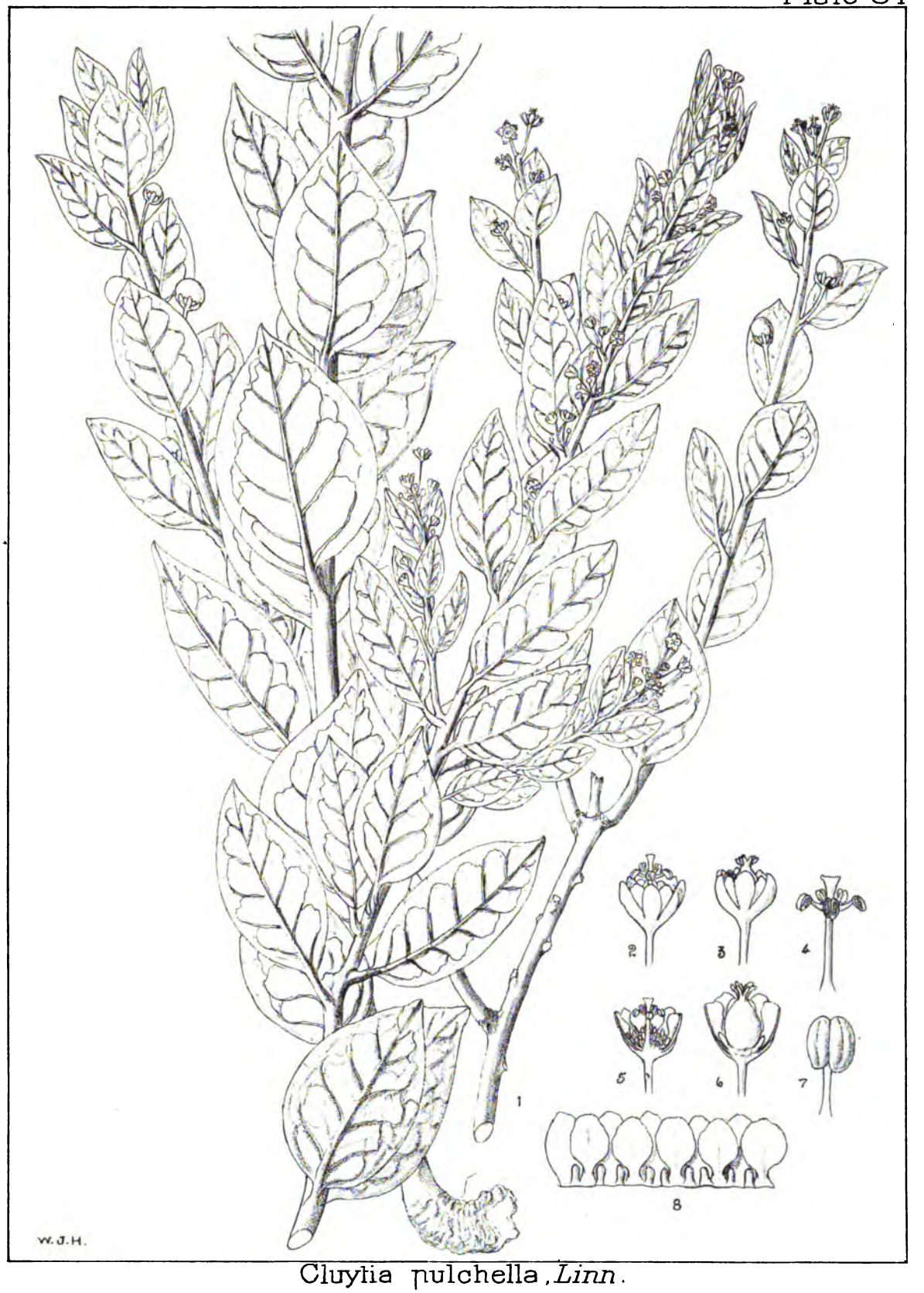

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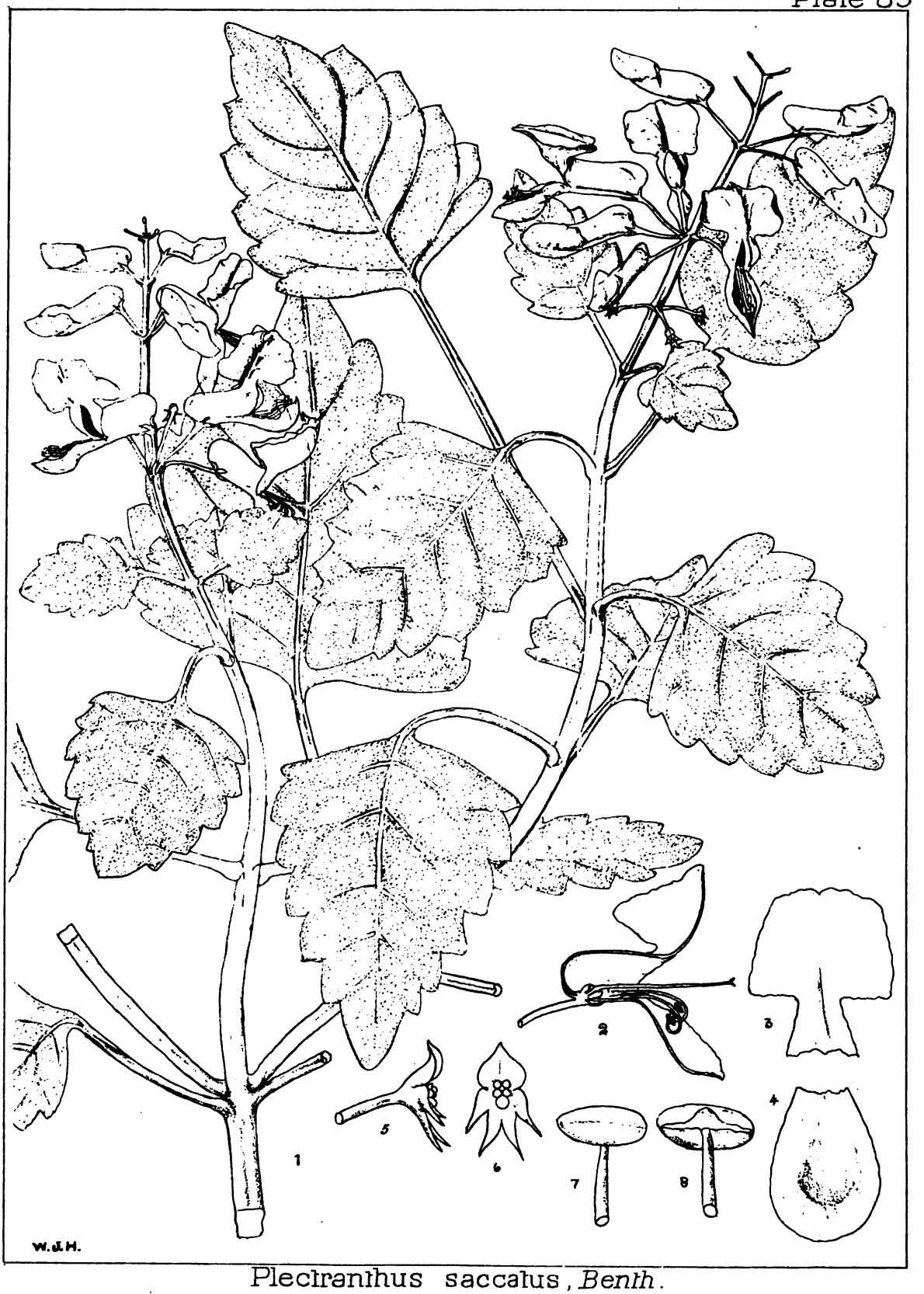

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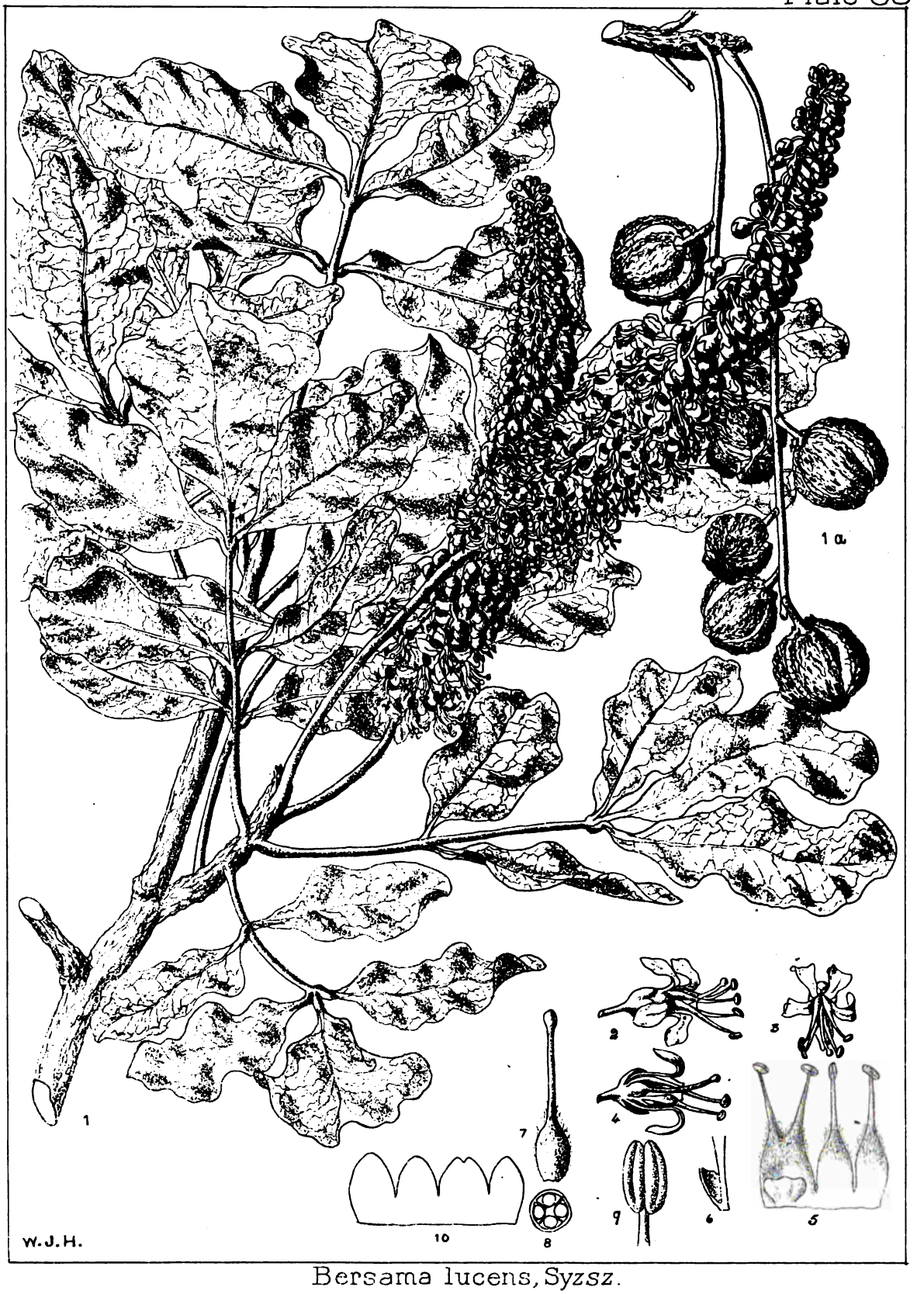
Peddiea africana, *Harv.*



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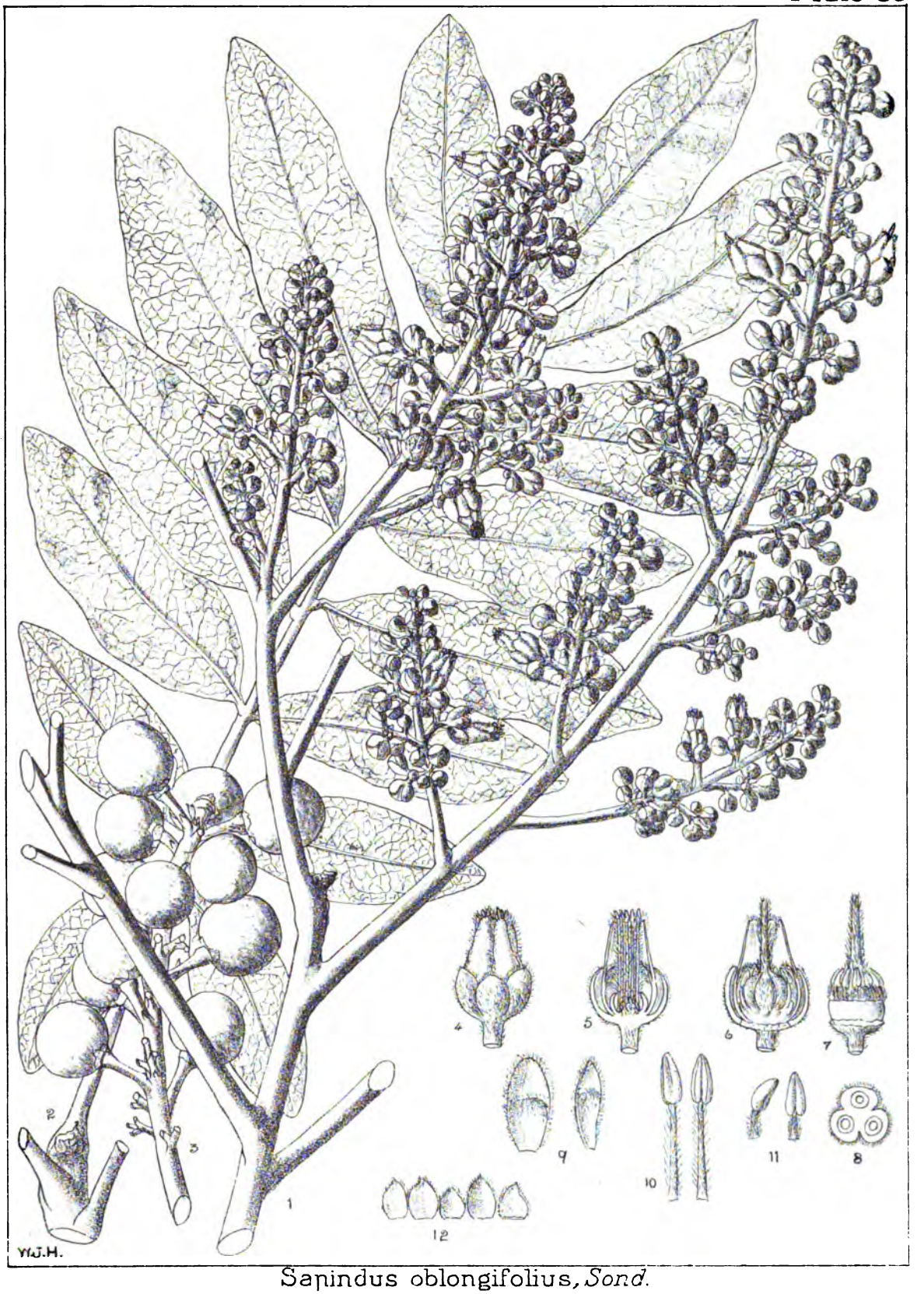

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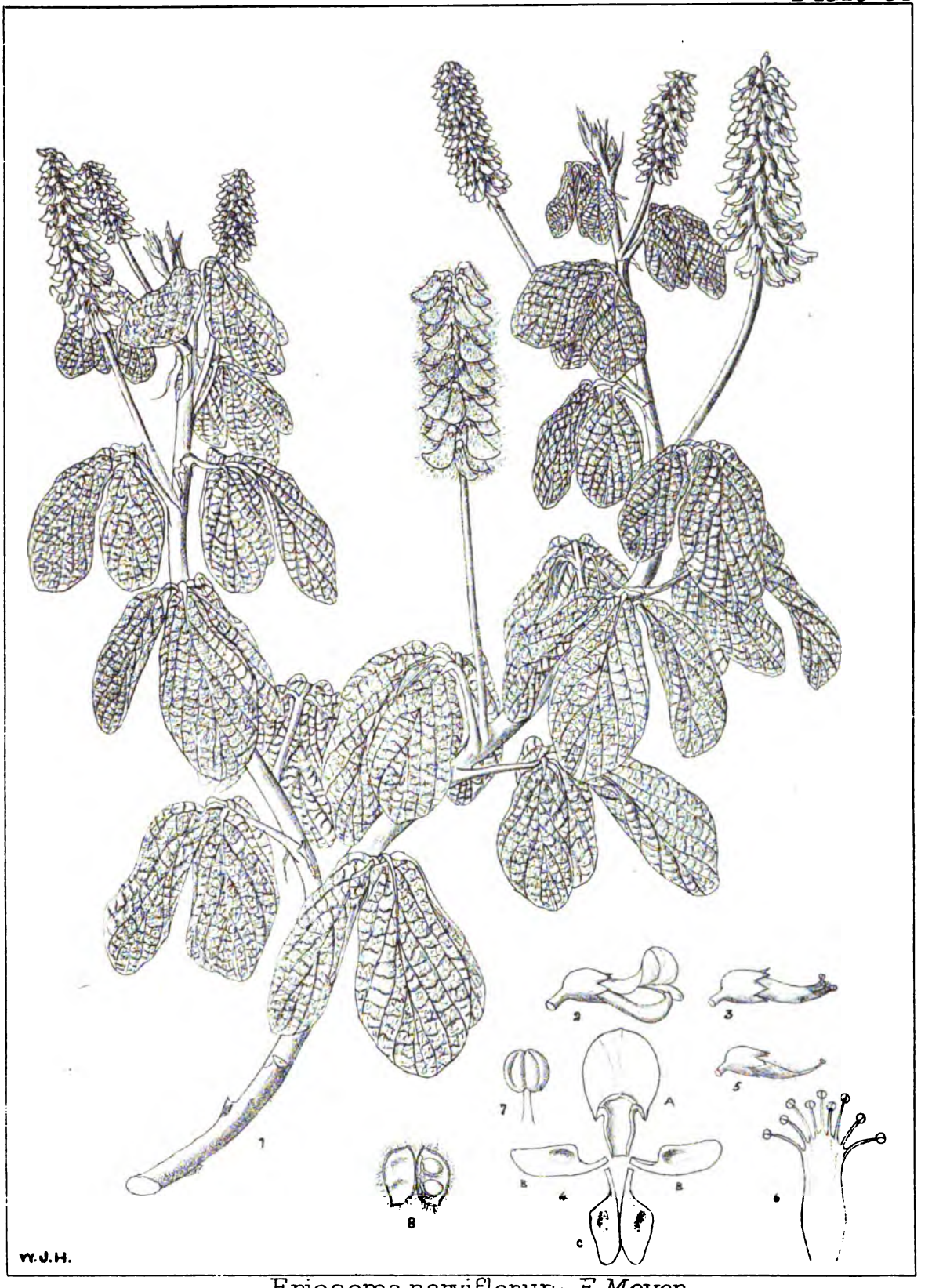

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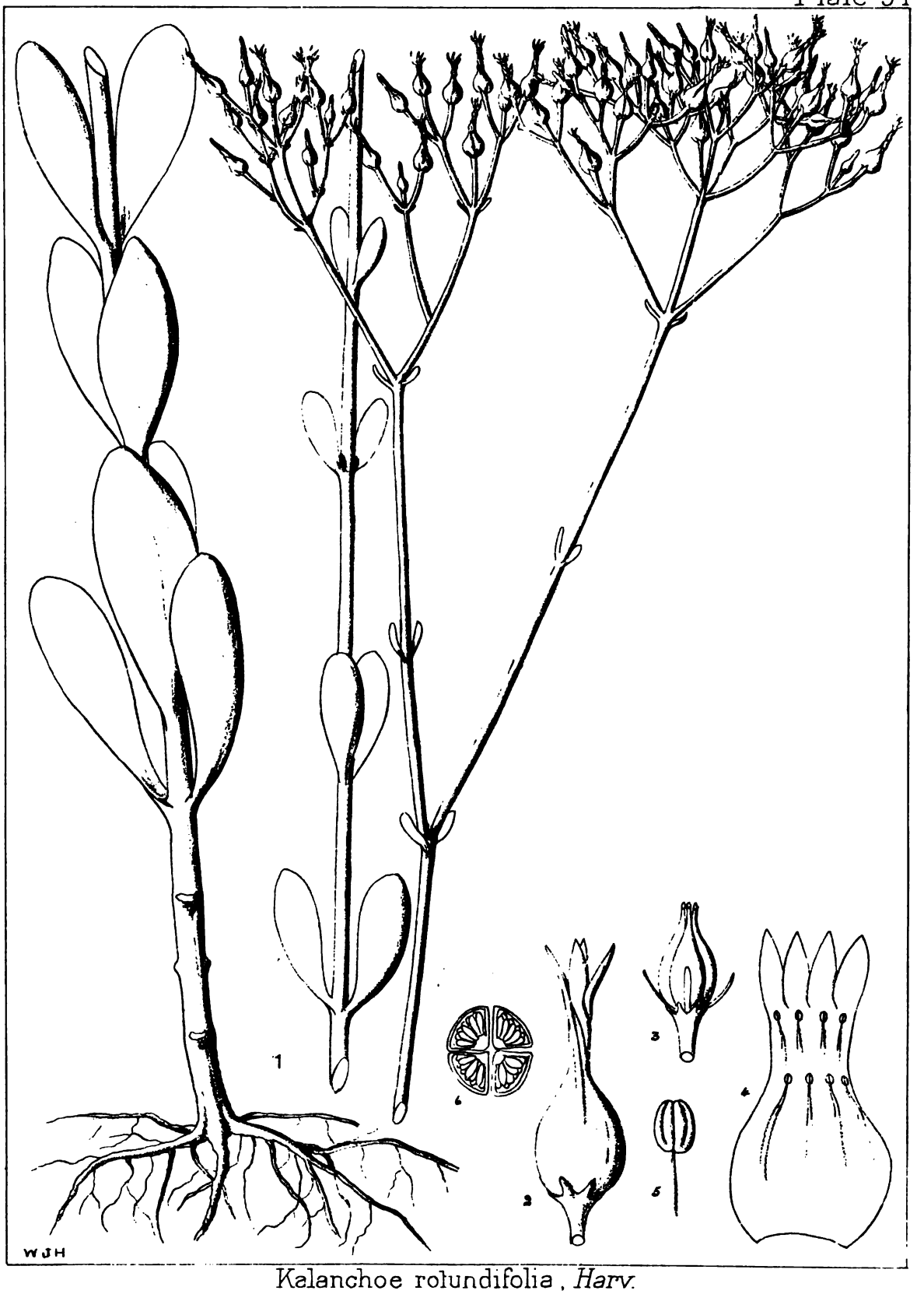

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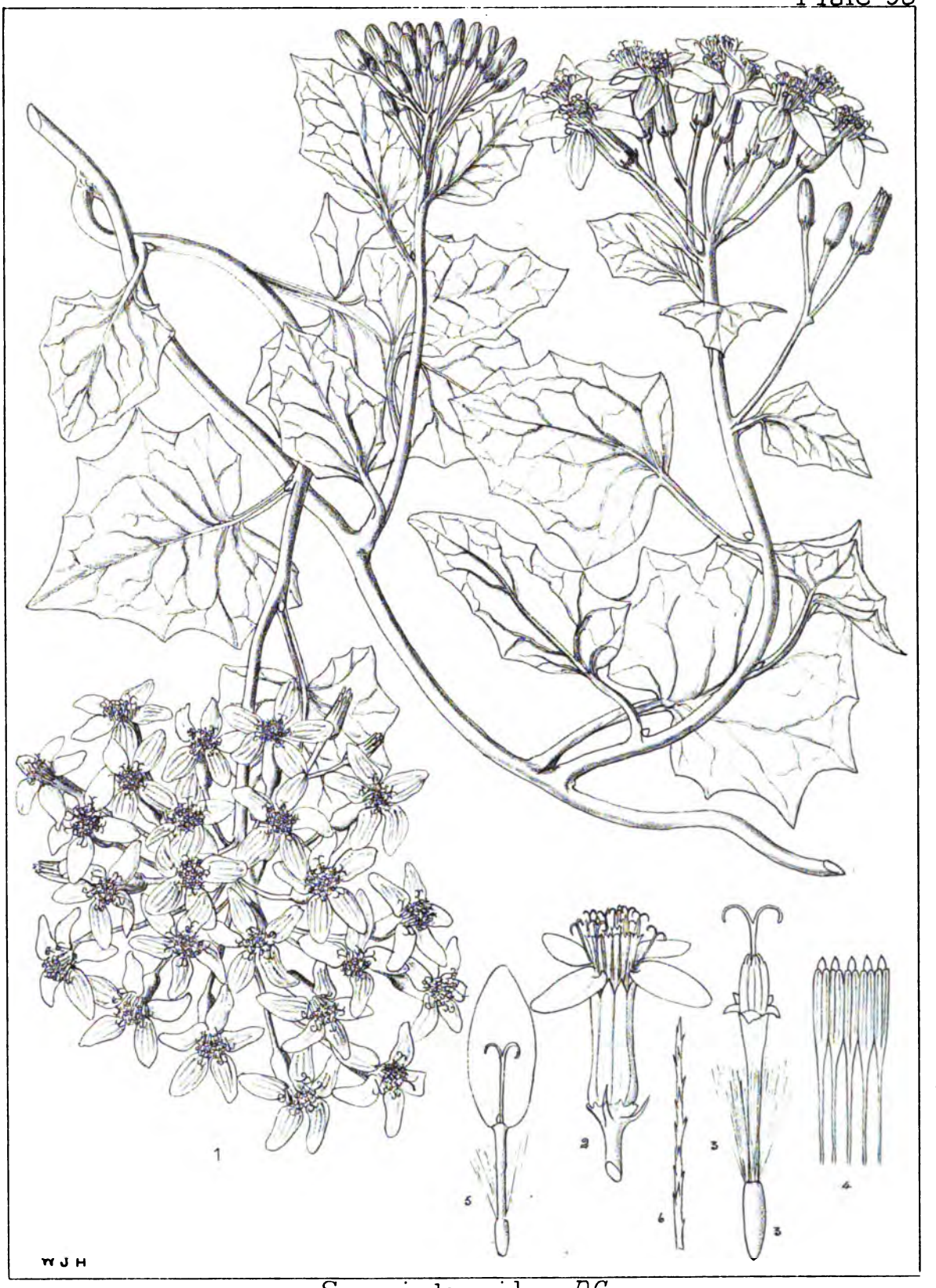

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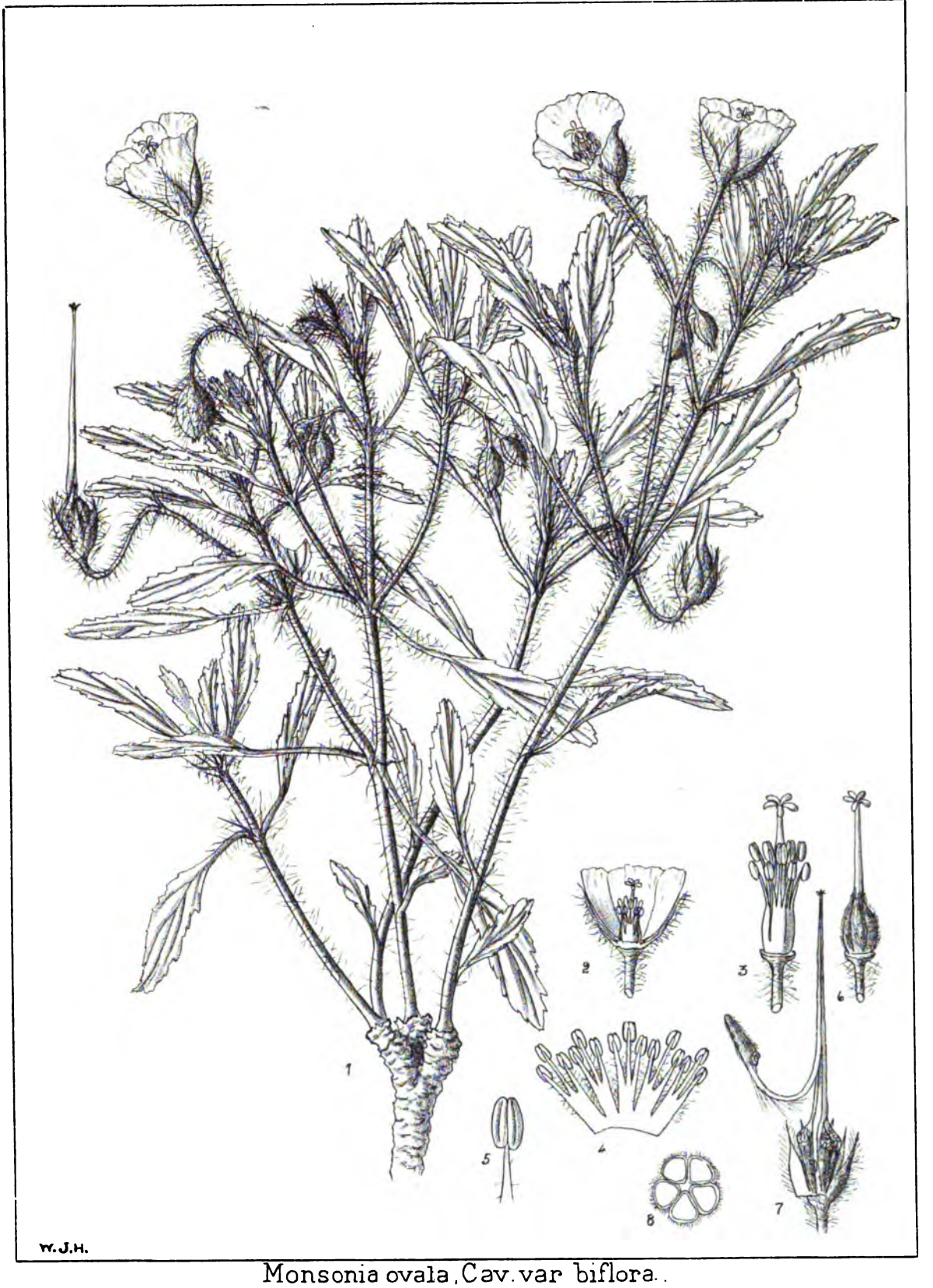
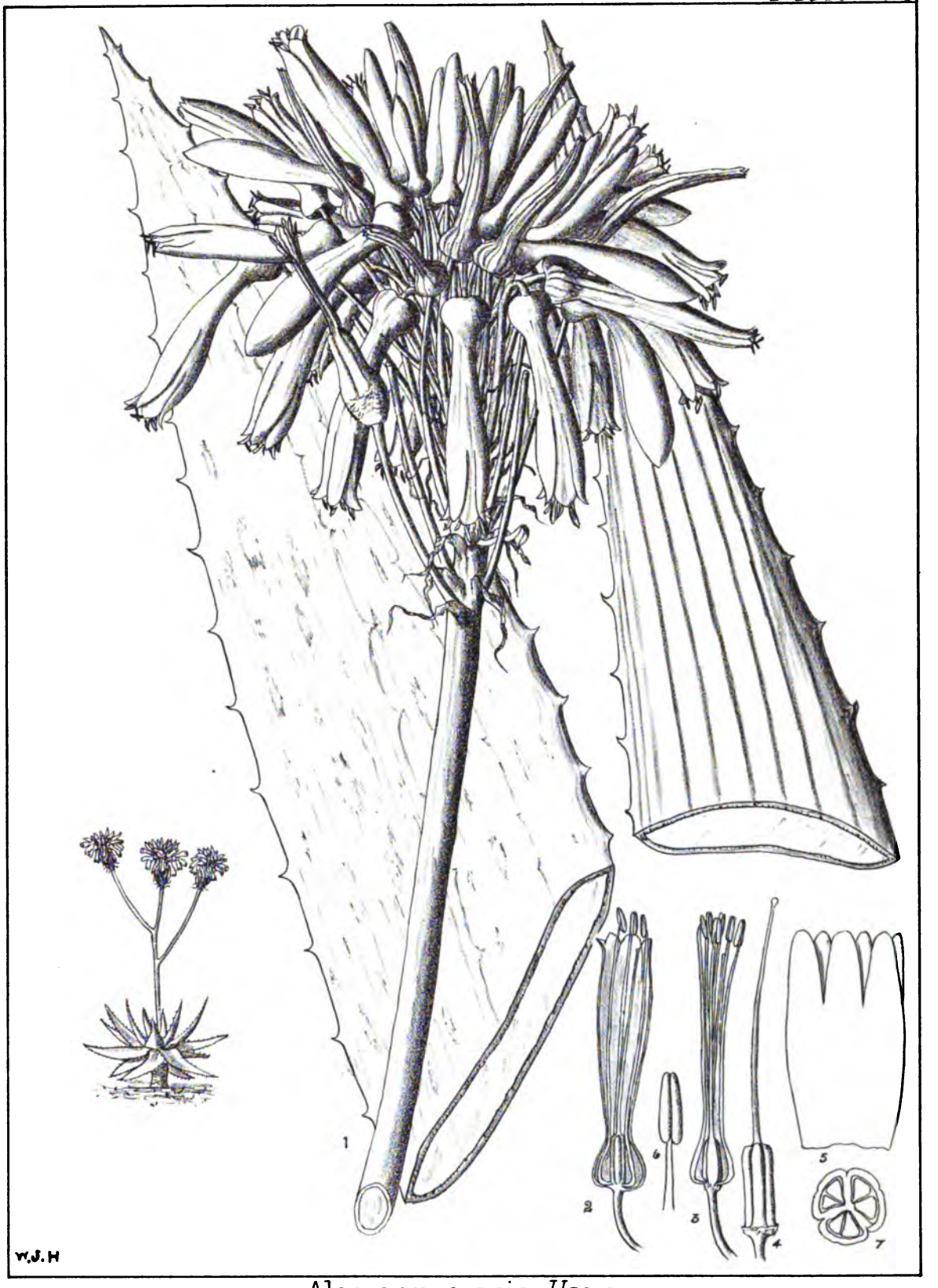


Monsonia ovala, Cav. var biflora.

Chlorophytum Haygarthii, *Wood & Evans.*

Gladiolus psittacinus, *Hook.* var Cooperi, *Baker.*



Aloe saponaria, *Harv.*

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